

Cultural Consistency in Australian Dental Students from Two Different Ethnic Backgrounds

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Abstract: The objective of this study was to examine the value orientations of dental students from different ethnic backgrounds studying in Australian dental schools. A ninety-eight-item questionnaire was used to collect the data, including fifteen subscales developed consistent with the Kluckhohn and Strodtbeck value orientation model. To compare the value orientation structure and to determine if any ethnic differences existed, a multivariate analysis of variance called profile analysis was performed on the fifteen value subscales. Of the 401 participants, 30.2 percent were Anglo-Australian and 44.9 percent were Asian. The remainder (24.9 percent) were “Other—background residents” or “Other—international students.” This article presents data from Asian (n=184) and Anglo-Australian (n=124) background respondents. Mean age was 21.7 years (s.e. 0.35 years) among Anglo-Australian and 20.8 years (s.e. 0.17 years) among Asians. Asians born overseas represented 70.7 percent (n=130) of this group. Of Australia-born Asians (n=54), 90.6 percent were first-generation Australians. When comparing their value profile, we found a significant association between ethnicity and value orientation profile scores ($p < 0.05$). Despite the significant overall result, the strength of the association ($\eta^2 = 0.007$) indicated that this effect was trivial relative to the unexplained variance in value orientation. The findings suggest that, behind an apparent ethnic diversity, a single distinctive value profile might exist to which the majority of dental students subscribe.

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As in most Western universities, an increasing number of students in Australian universities are from culturally and linguistically diverse (CALD) backgrounds (especially from Asian countries), and this trend is expected to continue,^{1,2} increasing the ethnic and cultural diversity of students in dental schools. A review undertaken in the School of Dental Science at the University of Melbourne during the preparatory stages of this study revealed that, until 1985, most dental graduates were from Anglo-Australian or European backgrounds. Since then, students from Asian backgrounds have

matriculated in increasing numbers. Students born overseas, for example, comprised 55 percent of Melbourne’s dental student population in 1995 and 63 percent in 2000, with a large proportion born in Asia.³ Similarly, at Sydney University’s Faculty of Dentistry, these proportions were approximately 65 percent in 1994 and 80 percent in 1995.⁴

In dental education the question arises as to whether these students differ from students whose cultural background corresponds to the dominant culture with respect to their world view or core values. The practical significance of this question is

twofold. The first concern is how to prepare future dental professionals for deployment in health service delivery to an increasingly culturally and linguistically diverse population. One position advocates matching health professionals to patients' cultural or ethnic characteristics as an ideal condition for working effectively with CALD patients.⁵ It is argued, therefore, that the success of optimal treatment will depend not only on the technical competence and expertise of the professional, but also on his or her cultural affinity with the patient.⁵⁻⁷ Another area of concern relates to whether educational institutions need to consider the cultural assumptions underlying their teaching programs (including learning and communication styles, expectations of students, and student-teacher relationships), as well as the extent to which it may be necessary to adapt instructional tasks, evaluation procedures, and social interaction in order to make their courses more suitable for students of various cultural backgrounds.^{4,8-10} However, it may be that CALD students no longer ascribe to the values traditionally associated with their cultural background; rather, those values may have been replaced by a cultural values system that is not dissimilar to that of students of the host culture.^{8,11}

Despite these concerns, this issue has received limited research or policy attention, and little research is available on multicultural dental education in Australia. The values held by CALD dental students in Australia have never been investigated previously, and little attempt has been made to determine whether the value orientations of CALD students in health professions differ from their Australian mainstream counterparts. To address this issue, an exploratory study was undertaken among students from four dental schools in Australia to compare the value orientations of Asian background dental students with those of their Anglo-Australian counterparts participating in a Western higher education system.

Theoretical Framework

Among the aspects that may distinguish cultural groups, value systems have been identified as a potential source of inter- and intra-ethnic variability and uniqueness, as well as similarities.^{6,12,13} Value systems are conservative, stable aspects of culture that change more slowly than outward aspects of culture, such as dress, food, or language.¹⁴ They have therefore been regarded as particularly useful in exploring cross-cultural variation.^{10,13}

Among the many theories to characterize the value system, the Kluckhohn and Strodtbeck¹⁴ value orientation theory has particular relevance because it allows between- and within-group comparisons of cultural patterns in a framework that is not culture-specific.¹² Kluckhohn and Strodtbeck postulated that, when comparing the profiles of two cultures, it is necessary to delineate five common human problems and investigate their ranking pattern in each culture: a) human nature—the basic moral character of human nature (good, mixed, or bad); b) people nature—human relationships with the natural world (subjugation to nature, harmony with nature, or mastery over nature); c) time—the temporal focus of human life (past, present, or future); d) activity—the motivation for human activity (being, being-in-becoming, or doing); and e) relational—the nature of relationships between human beings (linearity, collaterality, or individualism). This theory also assumes that there is an inconsistency in all five modalities between the internalized value orientation of the host culture and the value orientation of the culture in which a person was socialized or had formative life experiences.⁶ Thus, different solutions and variations will appear among and within cultures. However, each orientation is present in all cultures at a given time, and it is the ranking pattern of preferences that differentiates one culture from another. The aim of this study was to examine and compare the value orientations of dental students from different ethnic backgrounds studying in Australian dental schools.

Methods

A ninety-eight-item questionnaire was used to collect the data, including the forty-five items of the Tertiary Student Values Scale (TSVS).¹⁵ The TSVS was based on Kluckhohn and Strodtbeck's¹⁴ value orientation theory and was designed to measure the five value orientation domains. Three items measured the three possible variations in each domain. Each of the fifteen variations represents one subscale of the scale. Thus, the TSVS is comprised of fifteen value subscales. Participants were asked to rate on a five-point scale the extent of their agreement with the statements, from complete agreement (scoring "1") to complete disagreement (scoring "5"). The psychometric properties are reported elsewhere.¹⁵

In brief, to test the construct validity of the scale, scores on the forty-five items were factor-

analyzed using the maximum-likelihood estimation method with oblique rotation. The current analysis indicated that the TSVS reflects the hypothesized fifteen-dimension construct of value orientation. Furthermore, the analysis showed that the fifteen identified factors were independent of one another and could be measured reliably. Internal reliability was examined using Cronbach's alpha. Cronbach's alpha ranged from 0.55 to 0.80, except for one subscale (subjugation to nature), which had a Cronbach's alpha of 0.40.¹⁵

Between mid-May and mid-August 2002, students from the Bachelor of Dental Science course at Melbourne University were invited to participate in the study by completing a value orientation scale and a sociodemographic questionnaire. Participation was anonymous and voluntary. A cover letter with the questionnaire was mailed to all Melbourne dental students with permanent residence in Australia. A reply-paid envelope was included to facilitate response. Participants were asked to complete the instrument in their own time within a week of distribution. A follow-up was organized six weeks after the first contact.

From September to November 2002, all undergraduate dental students from the University of Adelaide, the University of Western Australia, and second-, fourth-, and fifth-year dental undergraduates from the University of Queensland were invited to participate in the study. (The dental school at the University of Queensland was under curriculum modification during 2002, and there were no first- or third-year courses that year.) All students were briefed on the aims of the study during a scheduled class meeting and invited to participate by completing a questionnaire. Participants completed the questionnaire anonymously in their own time and returned it to a special collection box located near their school's administrative area. Ethical clearance was obtained from all tertiary education institutions involved.

The analysis included the dependent variables represented by the fifteen value orientation scores and nine independent variables. In addition to age, gender, year of study, and religion, the ethnicity of the student sample was also collected: this was determined by country of birth and/or parents' and grandparents' birthplace and was classified into four groups: Anglo-Australian, Asian, Other, and International students. Anglo-Australian students were those born in Australia, the United Kingdom, New

Zealand, or Ireland with parents and grandparents also born in these countries. Although it is hard to argue that there is such a thing as an "Asian culture" due to the diversity among Asian countries, "Asian" students were defined as those whose ancestral origins were in east Asia: China (Taiwan, Hong-Kong, or the People's Republic of China), south Asia (India, Sri Lanka, Mauritius, and Burma), or southeast Asia (Vietnam, Malaysia, and Indonesia).^{10,11,13} Those students identified as "Other" came from a range of European backgrounds other than the United Kingdom or Ireland (for example, Greek, Italian, Russian) or from Latin America, Africa, or the Middle East. International students were those residing in Australia for the purpose of studying, but whose permanent residence was overseas. Age at arrival indicated the age at which an overseas-born student arrived in Australia. In addition, an index was computed to represent the proportion of life spent in Australia. The generation of the student and their family relative to their arrival in Australia was determined by report of place of birth of the participant and their parents and grandparents. Participants were also asked about their first language spoken.

Basic descriptive information on the distribution of the main sociodemographic and immigration variables by ethnic group was analyzed first. In the second phase of analysis, we investigated whether Asian and Anglo-Australian students had the same pattern of means for each of the value orientation subscales. For these purposes, a special application of multivariate analysis of variance (MANOVA) called profile analysis was performed on the fifteen value subscales. Profile analysis provides a test for the main effect of the dependent or grouping variable and of subscales, as well as their interaction.¹⁷ The grouping variable was ethnicity (Asian vs. Anglo-Australian). Level of significance was set at 0.05. However, in some tests, to compensate for multiple testing, a narrower confidence interval is suggested.¹⁷ Because of the exploratory nature of this inquiry, the level of significance was set at 0.01 for each test. All the analyses presented here were conducted using SPSS (Version 11.5).

Results

Four hundred and ten students returned the questionnaire. Response rates at each of the dental schools ranged from 51 to 59 percent. One hundred

and twenty-four participants were Anglo-Australian (30.2 percent), and 184 were Asian (44.9 percent). The remaining were from “Other” origins (13.7 percent) or “International students” (11.2 percent). This article presents only data from respondents (308 participants) of Asian and Anglo-Australian background. Students classified in the “Other” and “International students” categories were excluded from further analysis because of their small numbers and heterogeneity. No information was available on the sociodemographic characteristics of nonresponders.

Sociodemographic Characteristics

Table 1 displays selected demographic characteristics of the students who returned the questionnaire and met the selection criteria. Of these 308 students, sixty-seven were in the first year, sixty-four were in the second year, fifty-four were in the third year, seventy-five were in the fourth year, and the other forty-eight were fifth-year students. Interestingly, in Melbourne, as a reflection of the actual class composition where only two students were from Anglo-Australian background, none of the participating first-year students indicated they were from that background. Ages ranged from eighteen to forty-three years, with a mean age of 21.7 years (s.e. 0.35 years) among Anglo-Australian students. Among Asian students, ages ranged from eighteen to thirty-two years, with a mean age of 20.8 years (s.e. 0.17 years). One hundred and sixty-four (53.9 percent) were female, and 141 (46.1 percent) were male. Analysis by ethnicity groupings revealed no significant difference in age (without considering first-year students from Melbourne) or gender. Distribution of students by religious background showed that seventy-one students (23.2 percent) were Catholic and 85 (27.8 percent) were from other Christian religions. Another forty-five indicated non-Christian religions (14.7 percent), and 105 students (34.3 percent) indicated having no religion.

Overseas-born Asian students represented 70.7 percent (n=131) of this group. They included immigrants or children of immigrants who arrived in Australia before 1990 (46.2 percent) or between 1990 and 1995 (27.7 percent); another 26.1 percent arrived after 1995. For those who had immigrated, their average age at arrival was 9.5 years (s.e. 0.53 years). Thus, the majority (62.2 percent) had spent at least one-third of their lives in Australia. Of those born in Australia (n=53), 90.6 percent were first-generation Australians (students born in Australia of overseas-

Table 1. Summary of selected demographic characteristics by ethnic groups

Sociodemographic Variable	Anglo-Australian* percent	Asian* percent
Year of study		
First	15.3	21.8
Second	27.4	20.8
Third	18.1	17.5
Fourth	21.0	24.3
Fifth	17.8	15.6
Age		
Less than 21 years	44.4	51.6
21 to 24 years	41.9	40.2
More than 24 years	13.7	8.2
Gender		
Male	55.7	52.7
Female	44.3	47.3
Religion		
Catholic	31.5	17.6
Other Christian	33.9	23.6
Non-Christian	5.6	20.9
None	29.0	37.9
Generation		
Overseas-born		70.7
First		26.1
Second or beyond		3.2
*n=124		
*n=184		

born parents); one student (1.9 percent) was second generation; and seven (7.5 percent) were third-generation Australians. Most Asian participants (76.9 percent) indicated that English was not their original language; another 16.5 percent indicated that they had learned both their original language and English at the same time; and only 6.6 percent indicated that they learned English first.

Values Orientation

Mean scores for each of the value orientation subscales and ranked preferences by value orientation by ethnic group are presented in Table 2. The between-subject test indicated a significant ethnic effect ($F(1,277)=7.10, p=0.008$). A second concern was whether the slopes of the plot for each of the three variations across the five values orientations were not horizontal (slope=0) indicating the within-subjects effect for each orientation. This test indicated that there were significant differences on each

value orientation, independent of ethnic group ($F(10,268)=194.72, p<0.001$), demonstrating an overall difference in the response for each of the three variations within each value orientation.

However, the major question to be answered was whether Asian and Anglo-Australian students had a parallel profile of endorsement of each of the variations in value orientation. This test indicated that the value profile between the two ethnic groups deviated from parallelism at the conventional level of significance of 0.05 ($F(14,264)=1.97, p=0.016$). However, the strength of the association (represented by a partial η^2 of 0.007) indicated that this effect was trivial relative to the unexplained variance in value orientation, despite the significant overall result.

To follow up this overall interaction, comparisons were carried out independently within each of the five value orientations using MANOVA. This analysis yielded only one significant result, a significant main effect of ethnicity within the *activity* dimension ($F=(2,293)=4.02; p=0.018$). To follow up this deviation from parallelism, comparisons were carried out within this orientation. This finding indicated that the Anglo-Australian group endorsed two of the three variations of this dimension more highly than Asian students, but one (“being”) created a deviation from parallelism (see Table 2).

Discussion

This cross-sectional study of Asian and Anglo-Australian dental students indicated that they exhibited a similar pattern of agreement/disagreement on each of the variations of the five value orientations. These results were not consistent with those expected based on the literature on traditional Asian populations.^{19,20} On the contrary, the findings suggest that, behind an apparent ethnic diversity, there might exist a single distinctive value profile to which the majority of dental students subscribe.

These findings, however, do not imply that university students and the general population have similar value orientation profiles or that cultural or ethnic differences are not important. University students may well be different from the broader population they are representing, as the value profiles might represent the kind of values being promoted by higher education.²¹ Biddle, Bank, and Slaving¹⁸ favor the contention that students make the decision about their career based on pre-existing value orientation characteristics or trends that would tend to grow over time and that students’ values differ depending on their academic major. In courses such as dentistry that involve a large amount of time in class, laboratory, clinical work, and library study, students be-

come immersed in the school environment and dental professional culture.^{9,22} Therefore, as part of the undergraduates’ professional socialization, they may shift their values as they become increasingly involved in the dental school/departmental values orientation profile.

Thus, extensive enculturation or acculturation may have occurred before or during the students’ professional education process. This proposes an interesting research question: are students’ values similar at the beginning of their programs, or does change occur during the process of professional socialization? The cross-sectional nature of this study and sample

Table 2. Mean score on the fifteen-value orientation subscales by ethnicity

Value Orientation	Variation	Anglo-Australian		Asian	
		Mean (s.d.)	Rank	Mean (s.d.)	Rank
Person/nature	Mastery over nature	3.03 (0.70)	3	2.82 (0.72)	1
	Harmony with nature	2.95 (0.76)	1	2.86 (0.77)	2
	Subjugation to nature	2.94 (0.53)	2	3.02 (0.64)	3
Activity	Being	2.79 (0.59)	2	2.90 (0.81)	2
	Being in becoming	2.37 (0.65)	1	2.23 (0.65)	1
	Doing	3.14 (0.72)	3	2.91 (0.93)	3
Relational	Individual	2.99 (0.83)	2	2.76 (0.83)	2
	Collateral	1.93 (0.56)	1	1.98 (0.57)	1
	Lineal	3.96 (0.59)	3	3.85 (0.61)	3
Time	Future	2.19 (0.67)	1	2.18 (0.64)	1
	Past	3.76 (0.64)	3	3.54 (0.61)	3
	Present	3.62 (0.82)	2	3.45 (0.77)	2
Human nature	Good	2.87 (0.74)	1	2.88 (0.79)	1
	Mixed	2.98 (0.68)	2	2.92 (0.74)	2
	Bad	4.03 (0.69)	3	3.79 (0.76)	3

size limitations preclude a conclusion about acculturation increasing with exposure to dental training (and to the host culture) or the use of year of study as a proxy variable for years of exposure to professional socialization. A longitudinal approach is clearly more appropriate for exploring and understanding how cultural values change over time.

Schooling has been portrayed as the stage at which values, norms, and identities are established, realigned, or changed.^{23,24} In our study, most Asian students were either born in Australia or arrived in Australia with their families early in life, and therefore their lives have progressed with increasing exposure to Western thoughts and values. In addition, lack of original language skills might isolate younger members from the cultural traditions and values of their non-English-speaking parents or grandparents.²⁵ However, this was not the case in our study, as most of the students retained their original language. It is also possible that Asian students in this study came from families with values similar to those of their Anglo-Australian counterparts.^{10,16}

Involvement in religious belief systems was also explored, as it has been found that such involvement influences traditional cultural values.^{26,27} Other researchers^{28,29} have reported highly acculturated migrants as more likely to be self-identified as Protestant or agnostic. In our study, Asian respondents predominantly reported no religion or being from Christian denominations. This might have contributed to their values being closer to those of the dominant culture.

The findings also question the argument that it is ideal to match health professionals with patients from CALD backgrounds, based purely on their linguistic, racial, or ethnic background or country of origin. In other words, there may still be cultural differences in terms of value orientations between professionals and patients matched on external differences only. For example, some concepts and theoretical models that are commonly taken for granted in Western or Eurocentric environments may not apply (or have different meanings for) different cultural groups.²¹ It has been highlighted that a fundamental problem when working effectively with people from another culture would be understanding differences in world views. Thus, addressing the oral health needs of a diverse society would require not only a workforce that reflects that diversity at a surface level, but one that is actually equipped to address the complexities and challenges of an increas-

ingly diverse population. This is necessary to ensure that equality of outcome is achieved and that each community is effectively served regarding its oral health needs.

Although this study provides valuable insights into the value structure of dental students, it is not without limitations. The most obvious one is ethnic group classification. That is, although Asian groups may share certain traditions and values, they are distinctive ethnic groups and each has its unique characteristics.⁹ Nevertheless, limitation of sample size restricted classification of dental students by their own or their parents' country of birth. In addition, although the study achieved acceptable response rates, they generally were at the low end of the expected number of participants. However, considering these limitations, we believe that the present approach was adequate given the exploratory nature of the study.

It is indeed possible that there are important within-group variations, particularly among CALD students. Despite this, on average, the students of Asian background had similar values to their Anglo-Australian peers. Diversity within a particular cultural group was beyond the scope of this study due to the limited sample size. Further research in this field is needed to determine whether other factors in conjunction with ethnicity can provide a more sophisticated understanding of the cultural values that shape student values and career development. The need to consider the measurement of acculturation is central to this inquiry. In addition, although these findings advance our understanding of issues concerning multicultural dental education, no attempt was made to explore the qualitative meaning of value orientations or the factors associated with the development of tertiary education students' values.

The multicultural composition of dental students in Australia has significant educational implications. While it is important to acknowledge cultural differences, it may be incorrect to attribute cultural differences based on ethnicity or race. It is, however, important to investigate any negative effects on student educational experiences that may be related to differences in the cultural backgrounds of students even if they have similar value structures. Further exploration of individual value orientations would help to focus educational approaches and to better understand the range of cultures that students bring into the dental profession. This would contribute to making tertiary education institutions more

responsive to each culturally diverse group within the student body and less reliant on stereotypes or broad generalizations.

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