

Perceptions of the Importance and Control of Professional Problems in the Clinical Setting

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The objective of this study was to identify the relative importance of culturally relevant professional problems and the degree of control over them, as perceived by dentists and dental students in Mexico City, Mexico. The dentists and students ranked 13 problems according to importance and then according to the perceived degree of control over each one. Novice clinicians were less secure about their ability to cope with the legal, financial, and clinical performance problems, whereas experienced clinicians were more concerned about occupational hazards and the dental market and culture. Both reported similar perceptions of their control of the problems. This preliminary information should support introducing into dental schools relevant practice-management courses, targeting continuing education efforts, and instituting professional counseling measures to meet the challenges posed by these problems.

stress dental practice dental student burnout

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1. INTRODUCTION

Significant workplace-related stressors are present during the training for a career in the health sciences (Henning, Ey, & Shaw, 1998; Stewart et al., 1997) and in clinical practice (Croucher, Osborne, Marcenes, & Sheiham, 1998; Hill, Rolfe, Pearson, & Heathcote, 1998). The stressors relate to occupational hazards and professional problems and the perceptions that the clinician holds with regard to such stressors. Differences in the relative importance ascribed to problems in dentistry result not only from professional growth, but may also stem from the sociodemographic background of each dentist.

Studies have reported that dentists find dentistry hazardous (Cooper, 1980; Cooper, Mallinger, & Kahn, 1978, 1980); reasons for these perceptions vary substantially between cultural settings. For example, a list of important aspects affecting job satisfaction in California, USA, included professional environment, time and management, and staff and patient relations (Shugars, Hays, DiMatteo, & Cretin, 1991). Working posture and psychological fatigue interfered with job satisfaction in Finland (Murtomaa, Haavio-Mannila, & Kandolin, 1990). British dentists were concerned about HIV and herpes contagion, eye injury, and mercury and radiation exposures (Watt & Croucher, 1991).

It was suggested that burnout was related to organization of the practice rather than to involvement with patients or to personal characteristics of the dentists (Croucher et al., 1998). Using an instrument adapted to the Dutch culture, it was found that no association could be identified between workplace features and burnout, but that contact with patients and work pressure did contribute to professional stress (Gorter, Albrecht, Hoogstraten, & Eijkman, 1998, 1999). It appears that it was the interaction between the individual and the work environment more than the work environment per se that determined the impact of professional problems (Croucher et al., 1998; Gorter et al., 1998, 1999).

Professional problems do affect dentists, and diverse cultural settings add idiosyncratic interpretations and factors to the array of stressors perceived as problems worth citing in one setting but not in another. Some shifts in perceptions of problems that precipitate burnout in dentists have been linked to age (Murtomaa et al., 1990), but it is unclear whether age is merely a confounding factor relating to changes in income or time in practice (Shugars et al., 1991). Stressful factors that affect younger persons, such as students in the health sciences (Henning et al., 1998; Hill et al.,

1998; Nuttall & Gilbert, 1993a, 1993b; Stewart et al., 1997), have received even less attention. A developmental frame of inquiry could help the health sciences field understand how perceptions of problems change with increasing professional experience.

Most studies of professional problems among dentists have been conducted in countries with sophisticated professional systems and highly organized dental care markets. Little information has been gathered from countries with emerging professional structures and unequal levels of development, such as Mexico (Barnes, Díez-de-Bonilla, Maupomé, & Yen, 1997). Features of dental practice in Mexico have changed dramatically in a relatively short time (López-Cámara & Lara-Flores, 1983, 1992; Maupomé, Borges, & Díez-de-Bonilla, 1998). Underemployment of dentists is common, especially in urban areas; the dental market is poorly regulated; access to dental care is limited by poverty; and publicly funded dental services are few. In general, the dental practice model has been considered "in crisis" (López-Cámara & Lara-Flores, 1992).

In this manuscript we set out to investigate which contemporary features in the culture of dental health professionals in Mexico City, Mexico, were perceived to be significant problems, and the relative importance and relative degree of control ascribed to them. We used a developmental approach, interviewing both dental students and dentists at various stages of their careers, to explore the impact of experience in modifying perceptions of stressors.

2. MATERIALS AND METHODS

2.1. Development of the Instrument

A list of professional problems was obtained from a pilot phase during which focus groups were conducted to explore the question "What are the problems currently affecting clinical practice?" (López-Cámara, Maupomé-Carvantes, & Borges-Yáñez, 1994). The group discussions among 31 practising dentists were recorded and transcribed verbatim. Content analysis of the transcripts identified 56 problems, and additional qualitative analysis by the researchers produced 13 categories that were used to construct the interview material (Table 1).

TABLE 1. Array of Professional Problems Synthesized into 13 Categories and Three Families

PEER Family

Inability of Clinician to treat certain cases; lack of necessary/updated knowledge.

Litigation; legal suits from patients.

Disrepute; bad reputation among colleagues or patients due to clinical mistakes; patients' opinion regarding the dentist's clinical skills.

Relative lack of concern for oral health, and **Low Dental IQ** in the patient population.

FINANCIAL Family

Financial Problems; inability to pay for operating costs of dental office; constraints in equipment, instruments, and materials.

Tax Problems or tax burden on professional activity.

Low Busyness of the dental practice; low financial ability of patients to pay for treatment.

Excessive Number of dental practitioners to get a reasonable share of the patient market.

WELL-BEING Family

Risk of **Hepatitis B** contagion in the dental office.

Assault, robbery and **Security** in the dental office.

Injuries to the clinician or the patient, caused by accidents in the dental office.

Risk of **HIV** contagion in the dental office.

Emotional stress and occupational **Health Problems** in clinician, caused by professional practice.

2.2. Administration of the Instrument

Standardized interviewers administered the interview face-to-face. The interviewers asked participants to read the list of problems and to rank them, first in order of importance. The most important problem was to receive a score or rank of 1, and the least important, 13. The same rank could not be allocated to more than one problem, and a problem could be eliminated if the participant felt that particular item was not a problem. Once this step was over, the participant was then asked to rank the problems in terms of how much he or she felt in control of these problems and able to avoid being unduly affected by them. The problem that was best under control or that presented the participant with effects that could be more easily offset was ranked as 1. The problem that was least under control or that had effects more difficult to offset was ranked as 13. Again, participants could eliminate specific problems that were not applicable to their individual cases. No time limit was set for participants, and the interviewers carefully explained the instructions beforehand.

For the purposes of this investigation, the importance ascribed to a problem and the degree of control exercised over a defined problem represent two attributions to explain the world (Weiner, 1979). The dimension of controllability describes the extent to which causes are believed to be controllable or uncontrollable.

2.3. Participants

None of the dentists involved in the pilot phase took part in the final stage of the study.

No professional register of active dental practitioners is available in Mexico (Maupomé, Borges, & Díez-de-Bonilla, 1997; Maupomé et al., 1998); thus, it was not possible to design a population-based research framework. Because there was no objective advantage in choosing one sampling methodology over another, the interview was administered to two cross-sectional samples in Mexico City. One sample was a stratified random sample of senior dental students attending four of the nine dental schools. The sample was stratified first according to the schools and second on the basis of the groups that had lectures together. Students were not informed beforehand of the interview but were invited to participate in place of a lecture. The interviewers emphasized in an introduction there were no right or wrong answers; this was to be a more relaxed exploration of their opinions. Students who decided not to participate were free to leave the lecture theater without question. The second sample was a systematic sample of dental practitioners attending the largest dental products exhibition in Mexico. The 4-day exhibition draws several thousand dentists. Five trained interviewers approached for an interview every tenth person entering the exhibition hall.

2.4. Statistics

Data were analyzed with the Mann-Whitney U test, the Kruskal-Wallis test, the Wilcoxon matched pairs rank sum test, and stepwise multiple linear regression. Skewed distributions of the evaluations regarding the 13 problems and the large number of linear regression models that could have resulted from their appraisal precluded direct incorporation of each problem into a separate regression procedure. We chose instead to normalize the distribu-

tions and to narrow the number of problems by clustering them in three families: PEER (mean values of Inability of Clinician, Litigation, Disrepute, Low Dental IQ), FINANCIAL (Financial Problems, Tax Problems, Low Busyness, Excessive Number), and WELL-BEING (Hepatitis B, Security, Injuries, HIV, Health Problems; Table 1). Each family had an aggregated variable pertaining to importance and another one to control. Stepwise linear multiple regression models used these aggregated variables as dependent variables. There was no differentiation in the loading of the various factors incorporated in the models. Independent variables were the sociodemographic variables, with Years in Practice used as a continuous variable.

3. RESULTS

Participants took an average 14.3 min to complete the interview, excluding the extensive time dedicated to instructions and clarification of doubts. A total of 346 students and 269 dentists were interviewed (response rates, 98.3 and 89.4%, respectively); 8 interviewees at the exhibition were students, and thus their interviews are in that group. Sociodemographic information is in Table 2.

3.1. Results From the Nonparametric Tests

Both students and dentists ranked the perceptions of control and importance significantly differently for every problem except Low Dental IQ (Wilcoxon test, $p < .05$). The graphical relationship between the median positions of control and importance for each problem is shown in Figure 1. Problems closer to the lower left were deemed more important but also were felt to be under better control. Problems placed toward the upper right were considered less important and under less control. Note that the axes do not encompass the entire ranges of the scales; some problems share a square because they had the same relationship between control and importance.

Bivariate tests were used to identify significant differences in the ranks ascribed to each professional problem considering gender; whether the participant was currently practising or not; the length of time in practice; the maximum level of training; the type of dental school attended; the age group; and whether the participant was a dental student or a dentist. Table 3 portrays the perceptions of importance ascribed to the various problems

TABLE 2. Sociodemographic Information of Respondents

Sociodemographic Information	Dental Students		Qualified Dentists	
	<i>n</i>	%	<i>n</i>	%
Gender				
Female	242	39.3	157	25.5
Male	112	18.2	104	16.9
Age				
<25 years	308	50.1	111	18.0
26–40 years	44	7.1	136	22.1
>40 years	2	0.3	14	2.3
Interview Location				
Dental schools	346		56.0	
Dental exhibition	269		44.0	
Schooling/professional status (current)				
Dental student	354		58.0	
Qualified dentist	261		42.0	
Maximum level of training attained				
Dental degree	201		32.7	
Postgraduate/specialty	60		9.7	
Currently in clinical practice				
Yes	285		46.0	
No	330		54.0	
Years in dental practice				
<1 year	13		2.1	
1–5 years	175		28.5	
6–10 years	55		8.9	
>10 years	42		6.8	
Dental school participant graduated from or still attending				
Publicly funded in Mexico City	438		71.6	
Privately funded in Mexico City	95		15.5	
Schools elsewhere in Mexico or another country	79		12.9	

under study. Problems with an internal locus (Inability of Clinician, Litigation, and Financial Problems) were ranked as more important by female clinicians, clinicians that were not currently practicing, and clinicians who had less practice experience. As these problems were ranked as more important by participants whose status was student, the trend suggests that such problems were generally considered more important by novice clinicians. Problems with an external locus (Low Busyness, Health Problems, Excessive Numbers, Tax Problems, and Low Dental IQ) appeared to have

TABLE 3. Mann-Whitney and Kruskal-Wallis Tests Mean Ranks. IMPORTANCE Ascribed to Professional Problems

		Inability of Clinician		Financial Disrepute		Hepatitis B		Security		Injuries		Tax Problems		HIV		Low Busyness		Health Problems		Excessive Number		Low Dental IQ	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Gender		264.67	226.09	208.43	206.43	208.43	206.43	186.30*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*	202.67*
		<i>p</i> = .001	<i>p</i> = .025	<i>p</i> < .001	<i>p</i> = .002	<i>p</i> < .001	<i>p</i> = .002	<i>p</i> = .001	<i>p</i> = .036	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001
Currently practicing?		223.29	206.43	208.43	206.43	225.50*	223.80	186.30*	202.67*	225.50*	223.80	186.30*	202.67*	225.50*	223.80	186.30*	202.67*	225.50*	223.80	186.30*	202.67*	225.50*	223.80
		<i>p</i> = .001	<i>p</i> = .002	<i>p</i> < .001	<i>p</i> = .002	<i>p</i> = .007	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .036	<i>p</i> = .007	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .036	<i>p</i> = .007	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .036	<i>p</i> = .007	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .036	<i>p</i> = .007	<i>p</i> = .001
Years in practice		218.44*	191.38*	190.50*	204.13	288.50	288.50	246.63	202.89	246.63	202.89	246.63	202.89	246.63	202.89	246.63	202.89	246.63	202.89	246.63	202.89	246.63	202.89
		<i>p</i> = .006	<i>p</i> = .004	<i>p</i> = .004	<i>p</i> = .026	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> = .012	<i>p</i> < .001	<i>p</i> = .012	<i>p</i> < .001	<i>p</i> = .012	<i>p</i> < .001	<i>p</i> = .012	<i>p</i> < .001	<i>p</i> = .012	<i>p</i> < .001	<i>p</i> = .012	<i>p</i> < .001	<i>p</i> = .012	<i>p</i> < .001	<i>p</i> = .012
Maximum level of training		218.89*	197.74*	191.44*	280.10	280.10	280.10	248.61	204.15	248.61	204.15	248.61	204.15	248.61	204.15	248.61	204.15	248.61	204.15	248.61	204.15	248.61	204.15
		<i>p</i> = .001	<i>p</i> = .026	<i>p</i> = .005	<i>p</i> = .043	<i>p</i> = .043	<i>p</i> = .043	<i>p</i> = .012	<i>p</i> = .006	<i>p</i> = .012	<i>p</i> = .006	<i>p</i> = .012	<i>p</i> = .006	<i>p</i> = .012	<i>p</i> = .006	<i>p</i> = .012	<i>p</i> = .006	<i>p</i> = .012	<i>p</i> = .006	<i>p</i> = .012	<i>p</i> = .006	<i>p</i> = .012	<i>p</i> = .006
Dental school of origin		223.46*	196.82*	199.86*	239.39	239.39	239.39	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26
		<i>p</i> = .006	<i>p</i> < .001	<i>p</i> = .043	<i>p</i> = .043	<i>p</i> = .043	<i>p</i> = .043	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024
Age		223.46*	196.82*	199.86*	239.39	239.39	239.39	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26
		<i>p</i> = .006	<i>p</i> < .001	<i>p</i> = .043	<i>p</i> = .043	<i>p</i> = .043	<i>p</i> = .043	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024	<i>p</i> = .008	<i>p</i> = .024
< 25 years		223.46*	196.82*	199.86*	239.39	239.39	239.39	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26
26–40 years		223.46*	196.82*	199.86*	239.39	239.39	239.39	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26
> 40 years		223.46*	196.82*	199.86*	239.39	239.39	239.39	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26	240.41	294.26
Schooling/professional status		201.01*	191.42*	190.06*	286.71	286.71	286.71	258.67	348.71	258.67	348.71	258.67	348.71	258.67	348.71	258.67	348.71	258.67	348.71	258.67	348.71	258.67	348.71
		<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001
TOTAL		4626.03	4205.94	4069.75	3915.24	5023.44	4116.32	4550.34	3447.18	4550.34	3447.18	4550.34	3447.18	4550.34	3447.18	4550.34	3447.18	4550.34	3447.18	4550.34	3447.18	4550.34	3447.18
		<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> = .001	<i>p</i> = .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001

Notes. The group indicated with the asterisk (*) ascribed more IMPORTANCE to the specific stressor in the column.

a larger impact on the older, primarily male dentists. They were not only practicing currently, but also had more years in practice and higher training. Finally, whereas Hepatitis B was perceived to be more important by dentists than by students, HIV was considered almost equally important by both novice and experienced respondents. Together with Inability of Clinician, HIV and Hepatitis B were the problems deemed most important overall (Figure 1).

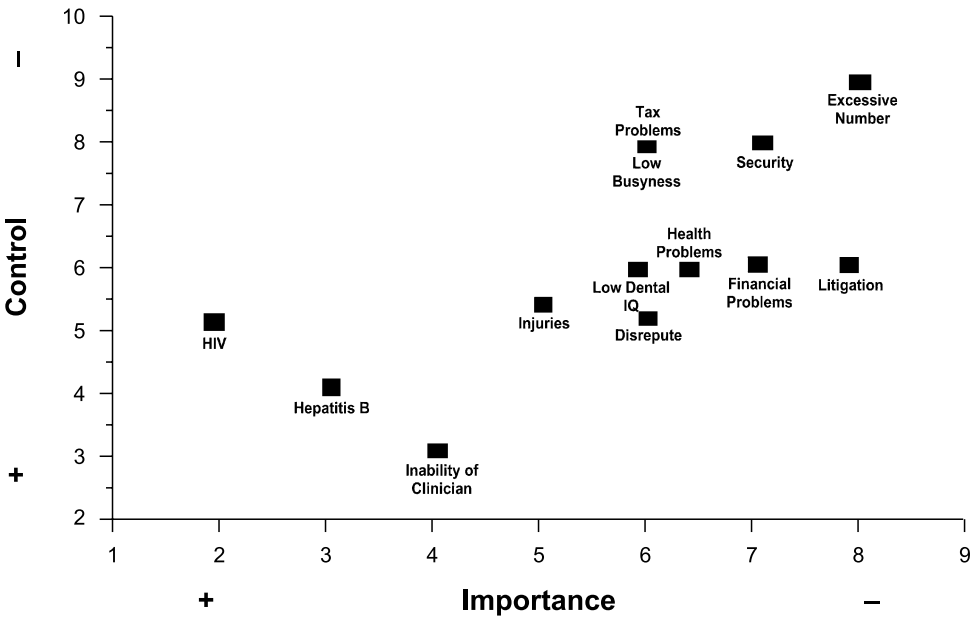


Figure 1. Graphical representation of the intersection of medians for each professional problem along the scales for IMPORTANCE and CONTROL.

Table 4 shows the perception of control over problems. Six problems were deemed to be equally well under control, or beyond control, across the various subgroups of participants (i.e., no differences between them could be established). Whereas dentists considered Low Dental IQ to be more important than students did (Table 3), they also felt in a better position than did the students to offset/control its impact. No differences were found with regard to Hepatitis B across the subgroups, but well-established dentists perceived the threat posed by HIV to be under better control than students or novices. Inability of Clinician, HIV, and Hepatitis B were the problems deemed under the most control, or with effects most effectively offset (Figure 1).

TABLE 4. Mann-Whitney and Kruskal-Wallis Tests Mean Ranks. CONTROL Felt Over Professional Problems

	Inability of Clinician	Litigation Problems	Financial Disrepute	Hepatitis B	Security Injuries	Tax Problems	HIV Problems	Low Busyness	Health Problems	Excessive Number	Low Dental IQ
Gender											
Male	193.56*					227.80					
Female	227.73					198.24*					
	$p = .007$					$p = .018$					
Currently practicing?											
Yes											207.46*
No											232.59
											$p = .037$
Years in practice											
<1 year			219.93	227.42							252.14
1-5 years			238.56	229.12							264.92
6-10 years			175.28*	166.31*							230.36
>10 years			259.45	185.86							229.68*
			$p = .045$	$p = .028$							$p = .023$
Maximum level of training											
Final-year dental student											
Dental degree											
Postgraduate/specialty											
Dental school of origin											
Publicly-funded, Mexico City							208.13				
Privately-funded, Mexico City							221.33*				
Elsewhere in Mexico/country							237.00				
							283.43				
							$p = .009$				
Age											
< 25 years			229.76								248.99
26-40 years			202.34								242.16
> 40 years			136.19*								105.17*
			$p = .020$								$p = .002$
Schooling/professional status											
Final-year dental student											257.91
Qualified dentist											224.20*
											$p = .009$
TOTAL	4710.75	4062.06	4228.19	3935.28	4959.20	4422.53	4608.42	3878.06	4917.29	4153.60	4248.79
											3704.88
											4342.97

Notes. The group indicated with the asterisk (*) felt more CONTROL over that specific stressor in the column.

3.2. Results From the Regression Models

Linear regression models showed that the importance of the aggregated variables PEER and FINANCIAL were affected by the number of years in practice, whereas WELL-BEING was affected by gender and whether participants were dentists as opposed to students. Perceptions of the PEER and WELL-BEING variables were affected by the number of years in practice. Whether participants were dentists or students had some bearing on the values for the PEER and FINANCIAL variables. The proportions of variance explained by the sociodemographic variables in Tables 3 and 4 were, however, minimal, ranging from 3 to 9% in the regression models.

4. DISCUSSION

Despite the fact that these groups of dentists and students cannot be considered statistically representative of the Mexican dental profession, the present exploration should help to establish a better base to understand the problems that may lead to stress or burnout. Differences by gender, years in practice, and student-or-dentist status further influence specific fears and concerns derived from such problems. From this preliminary information, it should be feasible to support the introduction of more relevant practice-management courses, continuing education efforts, and more sophisticated forms of professional counseling to meet the challenges posed by these problems. The array of problems identified outlines a different profile of concerns for the Mexican dental profession than elsewhere (Gorter et al., 1998; Watt & Croucher, 1991). Besides the ubiquitous HIV and hepatitis B problems, the stressors that respondents mentioned vary substantially across cultural settings. Together with incompatibilities of the measurement scales, such cross-cultural differences make direct comparisons difficult (Schaufeli & van Dierendonck, 1995). Nevertheless, the comparisons are important to identify coincidences and contrasts.

An overview of the results from the multiple regression models suggests that the perceptions for importance or control were not markedly different for the PEER or WELL-BEING families. HIV and Hepatitis B were, together with Inability of Clinician, highest in the scales of importance and control. The FINANCIAL family was lower on both scales.

Findings from the bivariate tests shown in Tables 3 and 4 are supported by the results of the regression models, but variances explained by the latter

were too small to focus in any more detail the results on Tables 3 and 4. In general, the problems that are more internal were cause for greater concern among the less-experienced, usually student clinician. Conversely, the problems that appeared to have a larger external drive or that were mainly influenced by the wider social environment were deemed important more often by the better-trained, currently practicing, and seasoned clinician. Gender is a particularly difficult aspect to appraise without bringing some basic demographic information into the discussion: Women make up two thirds of dental students in Mexico City, but men make up between half and two thirds of (full-time) practising dentists (López-Cámara & Lara-Flores, 1992). Some clinicians may have limited involvement in clinical practice, either because their career choices have prompted them to do so, or because as young graduates have not had the time to become fully involved in dental practice. We believe that nonactive professionals are relevant in the context of the study because (a) their perceptions offer an informative comparison framework between fully active professionals, and all remaining professionals. Also, (b) there is an obvious developmental perspective in how these perceptions change with more time, experience, and time involvement in clinical practice. Finally, (c) it is a reality of the Mexican dental market that there are too many dentists offering the same services to a reduced segment of the urban populations. The latter factor may be an important modifying factor in career choices.

Hepatitis B was perceived to be more important by dentists, yet HIV was considered almost equally important by everyone. These two problems were among the most important overall, as others have reported (Craven, O'Brien, & Bennett, 1996; Maupomé, Acosta-Gío, Borges-Yáñez, & Díez-de-Bonilla, 2000). Data from a parallel survey in the same setting suggest that whereas clinicians understood their professional or moral obligation to treat HIV+ patients, their experience treating high-risk groups was limited (Maupomé et al., 2000). This finding has been reported in the past in the case of dental students (Anderson, Call, & Vojir, 1994; Maupomé-Carvantes & Borges-Yáñez, 1993). Data from parallel surveys indicate that most participants—78% of dentists (Maupomé et al., 2000) and 80% of students (Maupomé-Carvantes & Borges-Yáñez, 1993)—had not been immunized against hepatitis B in the early 1990s. Such immunization figures are similar for Brazilian practitioners (Jorge, Jorge, Almeida, & Scully, 1996) and in obvious contrast with dentists in Canada, where in 1993 12% were not immunized (Gibson, Mathias, & Epstein, 1995); England, 5% in 1996 (Craven et al., 1996); and United States, 16% in 1992 (Cleveland, 1996). More recent figures for immunization against hepatitis B suggested that

marked improvements in immunization coverage have taken place in Mexico (Maupomé, Borges-Yáñez, Díez-de-Bonilla, & Irigoyen-Camacho, in press).

The conclusions from surveys on Infection Control (IC) highlight the gaps between knowledge and practice in Mexico (Irigoyen, Zepeda, & López-Cámara, 1998; Maupomé et al., 2000) that coexist with adherence to some of the current recommendations (Official Mexican Standards, 1995). It is not surprising in the present results that HIV and hepatitis B risks are high on the importance scale. A similar perception of the importance ascribed to HIV has been reported in Australia (Waddell, Bennett, & Davies, 1994), and again age and years of experience did not affect it. As attitudinal and normative variables play a major role in the decisions clinicians make during their care of high-risk patients (Chen, 1991), idiosyncratic factors may account for obscure variations across various cultural settings. Even under favorable conditions, compliance with IC regulations is far from perfect (Porter, El-Maaytah, Afonso, Scully, & Leung, 1995).

The issue of control in relation to professional problems is important in designing effective Health Promotion interventions (Watt & Croucher, 1991) for diverse cultural settings. Almost half of the problems under consideration were deemed by the various subgroups of participants to be equally well under their control, or beyond control. Low Dental IQ was the one item that the more seasoned clinician (who had considered the problem to be more important) felt in better position to offset/control its impact. One might expect Low Dental IQ, the quintessential external item in the list, to reflect the ability of the more experienced clinician to communicate effectively with patients. Low Busyness and Excessive Number, also prominent in the external domain, were in fairly similar positions of control and importance. These concerns characterize the disarray of the dental market in Mexico (Maupomé & Díez-de-Bonilla, 1995; Maupomé et al., 1998). Only the more seasoned clinicians could identify the importance of such problems. However, awareness of their importance did not translate into a feeling of being in better control of the situation. A survey found that not only were the conditions of the market getting worse, but also that standards of living of dentists were perceived to be deteriorating (López-Cámara & Lara-Flores, 1992). There are too many dentists concentrated in urban areas, offering services that are too expensive for the majority of the population (Maupomé et al., 1998). With 59 dental schools and courses in the country, 3,444 new dentists entered the workforce in 1997 (López-Cámara, 1998). Such overcrowding situations have been reported elsewhere in Latin America.

At the end of the day, the issue of employing this information in useful educational applications stands out as the most important benefit of the research effort. The dynamic relationships found between the perceptions of importance and control ascribed to each problem can only be understood in the specific educational and professional contexts of the Mexican profession; in the same fashion, specific measures to establish whether the assessment of importance and control are valid and accurate need to be contrasted with the realities of dental practice. Once that such measures are attained (e.g., by using qualitative research instruments), it would be feasible to design and implement initiatives at the undergraduate and Continuing Education levels to, first, educate students and dentists with regard to the true magnitude of the problems. Secondly, to introduce dental personnel to effective ways to offset the stress and burnout that salient problems may pose in everyday clinical practice—both relevant to the person and the institution. Finally, to assemble task forces within organized Dentistry and government regulatory bodies to issue clinical practice guidelines; the ultimate goal of such consensus between stakeholders and care providers will be to minimize the negative effects of problems on clinical performance, safety on the job, and occupational health. Clinical practice guidelines must take into account the various profiles of salient problems across age groups, level of experience, stage of career, and the type of professional involvement that the individual dentist is willing/able to adopt.

Among the conclusions from the present research, we found that novice clinicians seemed more insecure about how to deal effectively with the legal, financial, and clinical performance problems of clinical practice, whereas seasoned clinicians were more concerned with the problems pertaining to occupational hazards, the dental market, and the dental culture. The different appraisals between dentists and students in the dimension of importance were far less apparent in terms of the control felt over the stressors of dental practice.

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