



ORIGINAL ARTICLE

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The importance of leadership and management skills in dental practices to attract and retain patients in periods of economic recession.

Abstract: Objective: To test the hypothesis that leadership and management skills protect dental practices against the effects of an economic recession. Methods: This was a cross-sectional exploratory study. Dentists (n=232) were randomly selected to participate in an online survey in which they were asked about their practice activity. Results: A total of 162 questionnaires were returned (response rate 70%). Results indicated that improved leadership and management skills are positively related to the probability that a practice remained stable or increased its productivity during the economic recession: OR=2.39 (95% CI; 1.08-5.3). Conclusions: Our findings suggest that dental practices applying leadership and management skills are related to attract and retain patients, as measured by increased numbers of both initial consultations and continued patronage (return visits); and keep the economic crisis' impact on revenue manageable.

Keywords: Leadership, Practice Management, Economic Recession, Dentistry, Continuous Education.

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INTRODUCTION.

When the financial crisis hit the Spanish economy at the end of 2008, the dental industry was already immersed in a complicated economic change. Several years prior, dentistry already experienced a dramatic transformation with the significant growth of franchised dental service organizations (DSOs) and the increased influence of dental insurance organizations^{1,2}. In just a few years, the Spanish dental market had gone from an oligopoly (market controlled by the supplier of services or goods, *i.e.* dentists in this case), to an oligopsony (market controlled by those who demand the services or goods, *i.e.* DSOs and insurance organizations) due to their influence over large groups of patients².

Since the beginning of the economic crisis, indepen-

dent Spanish dental practices have seen their revenue plunge. The average amount that families spent on dental services, adjusted for inflation, decreased by 25.8% between 2008 and 2013³. Additionally, the proportion of Spaniards visiting a dentist at annually diminished from 44.7% in 2009 to 40.2% during 2011-2012⁴. In 2011, 10% of individual dental practices were sold, closed or went bankrupt. On the other hand, revenues for the DSOs and mainly insurance-based practices recognized a moderate growth in the past few years⁵.

The great recession has affected the dental market in several ways. Requests for appointments as well as actual visits have declined, mainly among adult patients. In turn, dentists have started to offer discounted prices. The recession has forced patients to decrease per capita expen-

ditures^{6,7} and choose less expensive dental procedures⁸. When possible, patients have opted for greater means of prevention in the hope to avoid more expensive restorative procedures⁹.

Dental market in Spain, as the rest of the economy, has suffered greatly from the international financial crisis. In 2010, the average probability of outstanding patient debt was 12.4%, while productivity and solvency were also adversely affected. Spanish families have reduced their expenditure for dental services to a greater degree than they have for other things, and the number of unemployed dentists continues to rise¹⁰.

The value of leadership development has increasingly been recognized for the impact that it can have on clinic leaders' effectiveness¹¹. Twenty years ago, Hughes *et al.*¹² noted that leadership and management skills hold considerable benefits for professional dental practice. Later studies reinforce the idea that effective leadership practices help a dentist to be prepared for times of financial uncertainty^{6,13}. As Rughani *et al.*¹⁴ noted "such skills are not specifically dental practice oriented, but can nevertheless be applied over a wide area both within and outside the dental practice". Nevertheless there is actually little literature available about this subject.

Practice management education focus is to provide the business and ethical context of care delivery and prepare dentists for the economic realities of the world. A number of academic dental institutions consider leadership and business management an important and yet underdeveloped area of the academic curriculum^{15-20,22}. Several dental schools have included leadership and management training into their academic programs¹⁸⁻²⁴.

The aim of this study was to test the hypothesis that leadership and management skills may protect dental practices against the effects of the economic recession.

MATERIALS AND METHODS.

This was a cross-sectional exploratory study. The target population was the 1,892 board-registered dentists at the Colegio Oficial de Odontólogos y Estomatólogos

de Valencia (ICOEV), Valencian Community, Spain. Study participants were chosen through random sample from the ICOEV professional collegiate dentists database. Overall, 232 dentists were selected for potential participation, and 162 individuals responded, for a final response rate of 70% (reported margin of error for this estimate was 4.5%). The survey name was "Impacto de la crisis en la odontología valenciana: percepción del dentista colegiado"²⁵.

The instrument for data collection involved a self-constructed questionnaire of leadership and managerial skills developed by the authors. The questionnaire underwent evaluation by three management expert domain experts, and its validity was confirmed after applying modifications. The online link to the survey was then sent via e-mail to prospective participants, with a follow-up e-mail sent 4 weeks later in an effort to increase participation.

The first section of the questionnaire included 6 questions devoted to demographic and professional data. In the second section, 5 questions were specified to measure leadership and management skills dimensions as follows: professional clinical skills in dentistry, diagnosis and treatment planning skills, skills for entrepreneurial decisions making, clinical knowledge management skills, and lastly team management and leadership skills. Management effectiveness was assessed in the third part of the questionnaire with some specified questions about economic consequences during difficult financial times.

The level of self-declared ability in management was measured using the Likert-type scale, in which 1 signified "very low" and 10 "very high". Taking into account our sample size and the degrees of freedom in the multivariate regression analysis, we built a dichotomist variable, "Leadership and management skills", to which the value 1 was assigned if the respondent ranked his or her own capabilities 7 or higher and declared he or she have attended at least one course in leadership and business management, and 0 if below 7. We used this approach to get the band score 7 or higher instead of the mean in order to avoid over perception bias.

The leadership and management skills dummy variable was associated with four different indicators regarding the individual's perception of his/her practice activity in past years: revenue, initial consultations, treatment acceptance and continued patronage (patient return). For each of these indicators, we also created a dichotomist variable, recording whether or not the participant felt that these elements had increased or remained stable at his/her office=1 or had decreased=0.

In order to analyze the association between leadership and management skills and the perception of the recession's effect on the practice, we used an Odds Ratio (OR) accompanied by a Chi Square Equal Proportions Test for significance. Furthermore, we estimate binary logistic regressions models with different activity indicators as the dependent variables (revenue; initial consultations; treatment plan acceptance; and continued patronage), with explanatory (leadership and management

skills variable) and control variables related to practice type that could influence productivity indicators (small practice, indicating a solo dentist practice; "chain" franchise practice, indicating a DSO practice setting; dental implant specialty practice setting; orthodontic specialty practice setting; and periodontic specialty practice setting). The estimation of logistic regression models also gave us an estimation of the adjusted OR values for control variables and the variables related to practice type that could have had an influence a priori on activity indicators. We consider a significance level of 0.05. Data was downloaded entered and analyzed in STATA 13.1 (StataCorp, TX, USA)²⁶.

RESULTS.

Table 1 represents a brief description of the variables used in the analysis and indicates the 95% confidence intervals of proportions.

Table 1. Descriptive statistics of the variables used in the analysis.

| Variable | | Proportion | | Standard error | (95% Conf. interval) |
|---------------------------------------|---|------------|-----|----------------|----------------------|
| Increase/stable revenue | 0 | 0.76 | No | | (0.68; 0.82) |
| | 1 | 0.24 | Yes | 0.04 | (0.18; 0.32) |
| Increase/stable Initial consultations | 0 | 0.58 | No | | (0.49; 0.66) |
| | 1 | 0.42 | Yes | 0.04 | (0.34; 0.51) |
| Treatment plan acceptance | 0 | 0.58 | No | | (0.49; 0.66) |
| | 1 | 0.42 | Yes | 0.04 | (0.34; 0.51) |
| Patient return | 0 | 0.42 | No | | (0.34; 0.51) |
| | 1 | 0.58 | Yes | 0.04 | (0.49; 0.66) |
| Leadership and management Skills | 0 | 0.71 | No | | (0.63; 0.78) |
| | 1 | 0.29 | Yes | 0.04 | (0.22; 0.37) |
| Small practice | 0 | 0.73 | No | | (0.65; 0.79) |
| | 1 | 0.27 | Yes | 0.04 | (0.21; 0.35) |
| Franchise practice | 0 | 0.89 | No | | (0.83; 0.94) |
| | 1 | 0.11 | Yes | 0.03 | (0.06; 0.17) |
| Specializes in implants | 0 | 0.78 | No | | (0.71; 0.84) |
| | 1 | 0.22 | Yes | 0.04 | (0.16; 0.29) |
| Specializes in orthodontics | 0 | 0.77 | No | | (0.69; 0.83) |
| | 1 | 0.23 | Yes | 0.03 | (0.17; 0.31) |
| Specializes in periodontics | 0 | 0.85 | No | | (0.77; 0.90) |
| | 1 | 0.15 | Yes | 0.03 | (0.10; 0.23) |

Figure 1 shows leadership and management skills in relationship to revenue, initial consultations, treatment plan acceptance and continued patronage (patient return). Over 42.9% of those surveyed who perceived stable or increasing gross earnings during the recession described themselves as having leadership and management skills; in

contrast to those who experienced declining revenues, of whom only 23.9% considered to possess management skills. Similarly, dentists with greater leadership and management abilities felt the recession's impact less: 37.9% versus 22.7% for initial consultations and treatment plan acceptance, and 38.5% as compared to 18% for patient return.

Figure 1. The relationship between leadership and management skills and different activity indicators in time of economic recession.

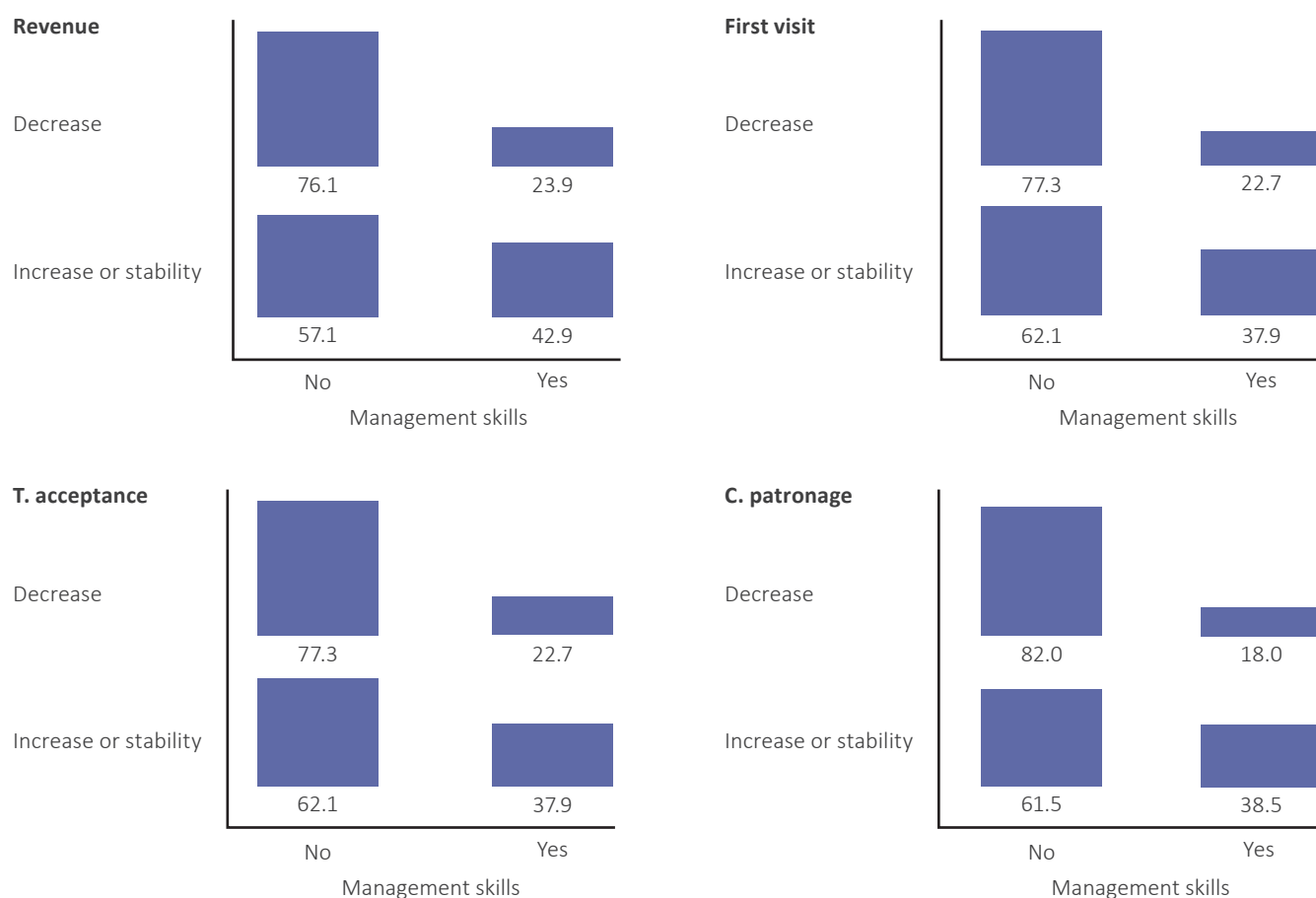


Table 2 indicates the OR for management capabilities and revenue, initial consultation, treatment plan acceptance and continued patronage (return visits). The OR for revenue of 2.39 (95% CI; 1.08-5.3) demonstrates that leadership and management skills are relevant in order for the practice to have increased or kept their revenue stable during a recession. Leadership and management skills were equally positive for the other three activity indicators, with

an OR of 2.07 (95% CI; 1.03-4.19) for initial consultations and treatment plan acceptance and an OR of 2.84 (95% CI; 1.31-6.18) for continued patronage (return visits).

These results are statistically significant and they indicate, as shown in the preceding descriptive analysis, that leadership and management skills have helped professionals weather the storm at moments of potential practice activity decline during the recession.

Table 2. Odds ratio between leadership and management skills and different activity indicators in time of economic recession.

| | Revenue | Initial Consultations | Treatment Plan Acceptance | Continued Patronage (Return) |
|----------------------|-------------|-----------------------|---------------------------|------------------------------|
| Odds ratio | 2.39 | 2.07 | 2.07 | 2.84 |
| (95% Conf. interval) | (1.08; 5.3) | (1.03; 4.19) | (1.03; 4.19) | (1.31; 6.18) |
| Pearson chi2 | 4.73 | 4.19 | 4.19 | 7.22 |
| Pr>chi2 | (0.03) | (0.04) | (0.04) | (0.01) |
| Nº observations | 148 | 154 | 154 | 152 |

Table 3. Multivariate analysis: Logistic regressions for different activity indicators in times of economic recession.

| Variable | Odds ratio (95% Conf. interval) | Revenue | Initial Consultations | Treatment Plan Acceptance | Continued Patronage (return visits) |
|----------------------------------|---------------------------------|-------------------------|------------------------|---------------------------|-------------------------------------|
| Constant | | 0.22*** (0.12; 0.40) | 0.76 (0.47; 1.22) | 0.76 (0.47; 1.22) | 1.51* (0.91; 2.49) |
| Leadership and management skills | | 2.56** (1.11; 5.90) | 2.58** (1.20; 5.53) | 2.58** (1.20; 5.53) | 3.73*** (1.60; 8.70) |
| Small practice | | 0.85 (0.33; 2.18) | 0.71 (0.32; 1.54) | 0.71 (0.32; 1.54) | 0.49* (0.22; 1.10) |
| Franchise practice | | 0.88 (0.23; 3.43) | 0.70 (0.22; 2.21) | 0.70 (0.22; 2.21) | 0.40 (0.13; 1.20) |
| Specializes in implants | | 0.57 (0.13; 2.47) | 0.25* (0.05; 0.95) | 0.21** (0.05; 0.95) | 0.26** (0.07; 0.99) |
| Specializes in orthodontics | | 1.24 (0.35; 4.40) | 0.70 (0.24; 2.07) | 0.70 (0.24; 2.07) | 2.70* (0.87; 8.31) |
| Specializes in periodontics | | 2.54 (0.58; 11.00) | 3.91* (0.90; 16.9) | 3.91* (0.90; 16.9) | 1.18 (0.31; 4.53) |
| Log likelihood | | -77.53 | -98.77 | -98.77 | -93.29 |
| # observations | | 148 | 153 | 153 | 151 |

*=statistically significant at the 0.1 level; **=statistically significant at the 0.05 level; ***=statistically significant at the 0.01 level;

Table 3 shows the results of a multivariate analysis through logistic regression. The estimated coefficients represent the OR of each of the variables. In the model that explains the increase or stability of revenue, the only significant variable is that of leadership and management skills, with an OR of 2.56 (95% CI; 1.11-5.90).

With regards to both initial consultations and treatment plan acceptance, the leadership and management skills variable is again the only significant one, and it is

positive as well when explaining increase or status quo in these indicators: OR of 2.58 (95% CI; 1.20-5.53). For these two activity indicators, a practice's specialization in either implants or periodontics produces very different results from those that correspond to a general dentistry practice: in dental implant practices, with an OR of 0.25 (90% CI; 0.07-0.84), the probability of a decrease in activity indicators is greater than for those specializing in periodontics, where the opposite effect

occurs: OR=3.91 (90% CI; 1.14-13.41).

Regarding continued patronage (return visits), positive effects are observed when the dentist is in possession of leadership and management skills (OR=3.73; CI=95%; 1.60-8.70) or if the practice specializes in orthodontics, where the OR is 2.63 (90% CI; 1.03-6.73).

Conversely, if the practice is small or it specializes in implants, an inverse relationship applies to this indicator OR=0.49 (90% CI; 0.25-0.96) and 0.27 (90% CI; 0.09-0.84) respectively. Whether or not the practice was a franchise was not significant and had no influence on activity indicators in any of our four models.

DISCUSSION.

We consider that an adequate management is essential for any company to run correctly and successfully. In an adverse economic situation, leadership and management skills become even more critical, and dental practices are no exception; to the contrary: the use of leadership and management strategies is key for both immediate economic survival and longevity^{27,28}. Good patient and practice management keeps patients closer to their dentist and guarantees correct follow-up of their oral health. The majority of dentists would like to see improvement in results when evaluating their practice activity, however few decide to acquire the management skills needed to bring about these results²⁹. This may be due because in good economic times the dentist is too busy providing clinical care and in difficult economic times the dentist is hesitant spending money on an intangible product, that is not guaranteed to increase return on investment.

Leadership and management skills allow dentists to confront the decline in activity that comes with a recession²⁹. Our results show that in an economic recession, obtaining and applying leadership and management skills have proven to create a comparative advantage. It's possible that dentists who have leadership and management capabilities succeed at attracting new patients to the practice and keeping existing patients close, so that there are more initial consultations and continued pa-

tronage (patient return); they also appear to be able to negate the amount of revenue lost due to the economic crisis. Our results show that practices with more than one dentist also tend to be able to gain some economies of scale and appear to fare better than solo practices in the economic crisis. This might be attributed to the fact that, as a practice and all its structures grow, it tends to develop its business side, and its activity tends to be managed as such.

Management is therefore an excellent opportunity to improve care delivery and to better the circumstances that currently limit dentists in their growth and activity. As in any other professional activity, for a dental practice to run well, it needs organization, order and a system. We expected that, without these basic requirements it would be very difficult for it to reach an adequate patient volume, for staff to get involved, and for there to be punctuality, efficiency in the paperwork, financial control, and a long etcetera of other elements that make the dentist have to be an experienced leader and manager as well as an excellent clinician. Applying business criteria to the profession should be seen not as a chore but rather a reality that makes professionals feel more comfortable in their workplaces, provides greater profitability and assures superior quality in care delivery.

The study has several limitations. First, our study design does not allow us to establish causality, so the result obtained here should be expressed as respondent's experience in his/her professional practice. Second, we explored results for those dentists who self reported attended at least one course in leadership and business management. Survey data, however, do not corroborate this information. Third, our instrument isn't validated for diagnostic or causality purpose. Its purpose is just to find associations and relationships between leadership and management skills and dental practice. Further studies are required to determine the reliability and validity of the instrument, especially in countries with same economic situation.

Our study uses data from a representative sample from

the Valencian Community. The Valencian Community has the fourth highest regional population in Spain, with over five million inhabitants. It's a highly industrialized zone, with a strong tourism sector and an important agricultural sector as well. The region's economy is the fourth largest of Spain and produces 9.6% of the nation's gross domestic product.

CONCLUSION.

Leadership and management skills may protect dental practices against the effects of an economic recession. Our findings suggest that dental practices applying leadership and management skills are related to attract and retain patients, as measured by increased numbers of both initial consultations and continued patronage (return

visits); and keep the economic crisis' impact on revenue manageable. However, these associations cannot speak to causality. Further studies are required to determine the reliability and validity of our instrument (questionnaire), especially in countries with same economic situation.

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La importancia de la gestión directiva y liderazgo en la práctica de la odontología para atraer y conservar pacientes en periodos de recesión económica.

Resumen: Objetivos: Contrastar la hipótesis de que las habilidades en liderazgo y gestión directiva de los odontólogos proporcionan una ventaja comparativa en el manejo de la actividad profesional en periodos de recesión económica. Material y método: Estudio exploratorio de corte transversal. Utilizamos los datos procedentes de una encuesta sobre actividad en el consultorio realizada a 232 odontólogos seleccionados aleatoriamente. Resultados: Se obtuvieron un total de 162 cuestionarios válidos (tasa de respuesta del 70%). Los resultados sugieren que la mejora

de las habilidades de liderazgo y de gestión se relacionan positivamente con la probabilidad de aumentar o mantener estable la facturación del consultorio en tiempos de recesión económica: OR=2.39 (IC del 95%, 1.08-5.3). Conclusiones: Nuestros resultados sugieren que las habilidades de liderazgo y gestión aplicadas a la práctica de la odontología están relacionadas con la capacidad de atraer nuevos pacientes y conservar los actuales, en términos tanto del número de primeras visitas como del retorno de pacientes; lo que permite atenuar el impacto de la crisis sobre la facturación del consultorio.

Palabras clave: Liderazgo, Gestión de la Práctica Clínica, Recesión Económica, Odontología, Formación Continua.

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