

# Organizational Characteristics and Preventive Services Delivery in the Direct Observation Study: a Qualitative Investigation

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## ABSTRACT

### Research Objectives:

To investigate whether various organizational characteristics and other potentially mutable factors are associated with different levels of preventive services delivery (PSD) in dental offices using qualitative methods and data.

### Methods:

As part of the Direct Observation Study, trained research-hygienists visited 120 dental practices, part of a practice-based dental network in Northern Ohio, for a period of 4 days. Over the course of the site visit, researchers directly observed 20-50 patient encounters with the dentist, hygienist, or both. Survey and qualitative data (field jottings, debriefing session notes) were collected regarding practice environment, staff relations, and provider-patient interactions.

PSD included a set of *a priori* determined practitioner behaviors, including hygiene instruction/education, oral cancer screening, and smoking and nutrition counseling. Using grounded-theory, we identified practices at the extremes of high and minimal PSD, based on cumulative positive or negative statements in the qualitative data. We also validated our categorizations based on quantitative data collected while observing 24 behavior-specific codes from a modified Davis Observation Code (Dental DOC) during the dental encounter. We then employed purposive sampling to include practices that varied on dentist sex, practice location (urban, suburban/small city and rural), and those that were both high and minimal on PSD.

Our theoretical orientation stems from a synthesis of several organizational behavior theories, including contingency, complexity, and ecological theory. Using these theories, we generated a list of characteristics hypothesized to influence PSD levels. These included: dentist sex, practice location, use of technology, social capital (staff relationships), specialization (division of labor), formalization (production goals, policies and procedures), management orientation (lateral, hierarchical, authoritarian), number of staff, and patient population (SES and insurance status). We generated a comparative matrix of factors and PSD categories and analyzed data from 40 practices, 20 categorized as high PSD and 20 minimal PSD, and then identified groups of factors associated with high PSD. Finally, we searched for "counterfactual" examples of practices where any of the identified salutary patterns of factors or individual factors were not present.

### Principal Findings:

Several factors were associated with those practices categorized as high on PSD. High PSD practices were more likely to exhibit higher social capital (shared ideas, trust, and good staff relationships), higher levels of formalization, and to have lateral or hierarchical management orientations.

**AN "EMERGENT FINDING":** While carefully reviewing observer notes and comments as we categorized practices as either minimal or high on PSD, we continually found references to someone in the organization—dentist, hygienist, or both—functioning in the role of PSD "champion." The champion(s) not only believed in the benefits of prevention but promoted it among patients and staff alike. This role is further detailed in several exemplar statements from the qualitative data in the third panel.

### Conclusions/Implications for Policy, Delivery or Practice:

These findings have practical implications for dental education and practice patterns. Future research regarding interventions to increase PSD may benefit specifically from a human capital orientation in primary and continuing educational programs, focusing on personality characteristics, management philosophy and provider beliefs about PSD.

### Study Staff Members and Support

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Table 1. Comparative Matrix of DDS or Practice Characteristics by Level of Preventive Services Delivery (PSD).

DDS or Practice Characteristic	Minimal PSD (N=20)	High PSD (N=20)	P Value*
<b>Sex, n (%)</b>			0.04
Female	1 (5)	6 (30)	-----
Male	19 (95)	14 (70)	-----
<b>Years in Practice, Mean (SD)</b>	24.4 (8.9)	20.4 (8.9)	0.18
<b>Practice Type, n (%)</b>			0.57
Solo	10 (50)	12 (60)	-----
Partnership	9 (45)	6 (30)	-----
Group	1 (5)	2 (10)	-----
<b>Practice Location, n (%)</b>			0.29
Rural	5 (25)	6 (30)	-----
Suburban	15 (75)	12 (60)	-----
Urban	-----	2 (10)	-----
<b>Patient Population SES, n (%)</b>			0.21
Lower	5 (25)	1 (5)	-----
Middle	12 (60)	15 (75)	-----
Upper	3 (15)	4 (20)	-----
<b>Staff Size, n (%)</b>			0.21
4 or less	5 (25)	1 (5)	-----
5-7	5 (25)	6 (30)	-----
8 or more	10 (50)	13 (65)	-----
<b>Number of Operatories, Mean (SD)</b>	5.6 (2.8)	5.5 (1.9)	0.95
<b>Technology level, n (%)</b>			0.28
Low	7 (35)	6 (30)	-----
Medium	11 (55)	8 (40)	-----
High	2 (10)	6 (30)	-----
<b>Management Orientation, n (%)</b>			0.04
Lateral	5 (25)	4 (20)	-----
Hierarchical	10 (50)	16 (80)	-----
Authoritarian	5 (25)	-----	-----
<b>Specialization, n (%)</b>			1.00
Low	6 (30)	6 (30)	-----
High	14 (70)	14 (70)	-----
<b>Formalization, n (%)</b>			<0.001
Low	15 (75)	4 (20)	-----
High	5 (25)	16 (80)	-----
<b>Group Social Capital, n (%)</b>			<0.001
Low	11 (55)	1 (5)	-----
Medium	7 (35)	7 (35)	-----
High	2 (10)	12 (60)	-----

\* P values were based on Pearson's  $\chi^2$  for categorical variables and t-tests for continuous variables.

### Study Limitations

Several limitations should be noted in our study. First, our findings are based on case studies of practices at polar extremes of the distribution of PSD, and as such should not be generalized to those practices who deliver a wide variation in PSD between those extremes. Secondly, all measurement is subject to some degree of error, and our qualitative data is no exception. Errors in observation may have included: a) overlooked or missed behaviors, b) sensitization and de-sensitization to characteristics over time, and c) miscoding of notes, among others. Finally, our *principle findings* were based on qualitative data ONLY; future work on these issues will include other variables from direct observation data, practice environment and employee surveys, and other instruments that may complement or alter the findings presented here.

## VARIABLE DEFINITIONS AND CONSTRUCTION

### Practitioner and Practice Demographics:

We used data from dentist surveys to determine dentist **sex, years in practice, and practice type**. Data from a practice environment survey was used to determine the geographic **practice location**.

### Practice Characteristics: Examples using Qualitative Text Quotations

#### Delivery of Preventive Services & Prevention Champion:

"The DDS never brought up preventive counseling...He didn't talk about prevention at all."

"Dentist--very good educator, very patient minded...The office does a very good job educating the patient, it is apparent this is a strong preventative practice. Dr X completes a thorough oral exam on her hygiene patients...examines lymph nodes and always performs oral cancer screenings."

"...they are not big on education. The hygienist recommended flossing but she never gave more detail in her education. She perio-probed everyone but they never charted it...she would give feedback to patients but never told them what flossing would do for the area."

"He was the first dentist I observed who asked his patients about smoking; every patient that he saw he updated their medical history and smoking was one of the questions he asked."

"She explains everything... When doing Perio charting she first explains the numbers she'll be calling out and what they mean. She talked to everyone about brushing and flossing."

#### Technology Level:

"Overall, the office did not provide much in the way of high tech or advanced technology equipment, but the quality of care was still present."

"This office provided the technology you would expect for a downtown office. They had intra-oral cameras...and the Casey DVD system. For whitening, they have the fastest in-office bleaching system...they were getting a demo for the Diagnostod...[and] a new Panoramic x-ray machine was delivered."

#### Management Orientation:

"The staff kept mentioning to me how nice he is to work for compared to other places they've worked. The DDS said to me, "...my staff is #1...if my staff is happy they will make sure the patients are well taken care of."

"There was a little sign in the back about not making personal phone calls for the staff and you can't be at the desk unless you have a patient, you can only call people back at noon or after work. He was the dentist. I got a couple of eye rolls from the asst when he said something."

#### Specialization:

"The office space was very large to accommodate the large staff. There are 2 doctors, 3 hygienists, 3 EFDA's...1 additional assistant, 3 receptionists, and even the hygienists have their own assistant."

"There was an office manager for the back office, and one for the front office, they had so many girls that had specific jobs, that there was no cross training and when you asked one of them a question, they couldn't answer it, you had to ask the right person..."

#### Formalization:

"I think the philosophy of this office was consistency. I saw the doctor do the exact same thing as the hygienist, and both hygienists did the same things; they used the same words, using flip charts, saying the same things about perio. This consistency carried to the front desk as well."

"In this morning huddle, each staff member had her own role, the hygienist went over her schedule...the assistant went over their patients and made notes about what instruments they might need...and the receptionist went over...who is an emergency and what their concerns are..."

#### Group Social Capital:

"His staff all seems to get along great...they have been to many seminars and have many plaques hanging...There were pictures...showing functions they have been to. You just got a great feeling from this office that everyone enjoyed working there and really cared about the patients."

"Staff relationships were not good, they were just doing their jobs. There were so many office staff, there didn't seem to be a lot of teamwork. There wasn't a "team" feeling."