

These results accompany the following paper: Gilbert GH, Litaker MS, Makhija SK. Differences in dental practices attended by African Americans and non-Hispanic Whites. *Journal of Health Care for the Poor and Underserved*; under review.

The purpose of this addendum is only to provide results related to the *approach to care* variable.

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### **INTRODUCTION addendum**

The FDCS has also identified *typical approach to dental care* as an important variable for social disparities research, in addition to race and SES, because it is a characteristic that crosses race and SES lines and because it so strongly predicts incident dental care use, prevalence of oral diseases and conditions, and subsequent changes in oral health and oral health-related quality of life<sup>8</sup> (for a full list of FDCS references, see the website cited in the Acknowledgments section). *Typical approach to dental care* differentiates *problem-oriented attenders* from *regular attenders*. In the FDCS baseline phase, problem-oriented attenders reported that they seek dental care only when they have a specific dental problem. In contrast, regular attenders reported that they seek dental care on a regular basis, whether or not they perceive a dental problem.

Because problem-oriented attenders in the FDCS also reported at baseline that they had low-quality dental care<sup>11</sup> and reported during follow-up a low likelihood of having had dentists discuss treatment alternatives with them,<sup>12</sup> we hypothesized that there were systematic differences in the characteristics of the dental practices attended by these groups. Therefore, we also tested the hypothesis that problem-oriented attenders attend dental practices that have significantly different characteristics than those attended by their regular attender counterparts.

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### **METHODS addendum**

Participants were asked to describe approach to dental care as: 1) *I never go to a dentist*; 2) *I go to a dentist when I have a problem or when I know that I need to get something fixed*; 3) *I go to a dentist occasionally, whether or not I have a problem*; or 4) *I go to a dentist regularly*. People who responded number 1 or 2 were classified as problem-oriented attenders, and those who responded number 3 or 4 were classified as regular attenders.

Of the 718 (weighted *n*) participants who reported having had at least one dental visit during the first 48 months of the study (and for whom a dental record search was therefore applicable), we located complete chart data on 623 (weighted *n*), and 513 (weighted *n*) of these had dentists who completed a practice characteristics questionnaire. These included 181 problem-oriented attenders and 332 regular attenders.

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### **RESULTS addendum**

Tables 2 and 3 show the least-squares means and standard errors of characteristics of the dental practices attended by FDCS participants, by the participant's Table 4 shows the statistical significance of these three variables when all three variables were structured as main effects in a single linear regression.

**Practice setting.** Problem-oriented attenders were more likely to have attended dental practices that were busier, had longer waiting times and appointment delays, had higher percentages of patient visits due to unscheduled care, had more patient visits each week done by the dentist, used more dental chairs, and had more part-time staff (Table 3). Race, income, and approach to care each had significant effects in regressions that included these three variables, although approach to care was a significant effect most often of these (Table 4).

**Patient population.** Approach to care was associated with 17 of the 30 measures of patient population (Table 3). Practices attended by problem-oriented attenders, as compared to practices attended by regular attenders, reported having fewer patients covered by a private

insurance program and more covered by a public program and more patients who are not covered by any third party. Practices attended by problem-oriented attenders reported more practice charges that were derived from *other* sources, lower percentages of patients on extended payment schedules, and fewer older patients. Problem-oriented attenders were also more likely to have attended practices that had lower percentages of older patients and patients who seek care soon enough, pay their bills, follow advice about dental hygiene, show for appointments as scheduled, take responsibility for their oral health, treat dentists with the respect they deserve, and want to know details about the condition of their mouths. Problem-oriented attenders were more likely to have attended practices that had higher percentages of patients who fear dentists, complain about waiting, and African American patients. Race, income, and approach to care each had significant effects in regressions that included these three variables, depending on the specific measure (Table 4).

**Dental procedure characteristics.** Approach to care was associated with 25 of the 30 measures of dental procedure characteristics (Table 3). Practices that by problem-oriented attenders visited reported having fewer patients whose dental extractions were eventually replaced by a fixed bridge or dental implant, and more patients who never got a replacement of any type or for which the tooth was placed by a removable denture than practices attended by the regular attenders. Problem-oriented attenders attended practices that did more dental extractions each month, and in which the dentist spent more patient contact time doing dental extractions, removable prosthetics, periodontal therapy, and endodontic therapy, and less time doing non-implant restorative dentistry. Approach to care was significantly related to each measure of typical fee. Problem-oriented attenders were more likely than regular attenders to have attended practices that referred implant restorations to other dentists. Problem-oriented attenders were less likely than regular attenders to have attended practices that referred periodontal surgery to other dentists, anterior tooth root canals, molar tooth root canals, non-surgical extractions, and surgical extractions, but which were more likely than other practices to refer implant restorations. Problem-oriented attenders were less likely than regular attenders to attend practices that had high percentages of patients who had dental x-rays, received oral hygiene instruction, or who had intraoral photographs taken. Race, income, and approach to care each had significant main effects in regressions that included these three variables, depending on the specific measure (Table 4).

**Dentist individual characteristics.** Approach to care was not associated with any of the measures of dentist individual characteristics. When tested as main effects in regressions that included all three variables (race, income, approach to care), the race of the Florida Dental Care Study participant had a significant main effect for *Patients are better off not knowing all the facts...*, while approach to care was significantly related to dentist's age and graduation year (Table 4).

**Table 3. Means and standard errors of characteristics of dental practice(s) attended by FDCS participants during follow-up, by approach to care as reported at baseline**

Dental practice characteristic	Problem-oriented attenders	Regular attenders	statistical significance*
<b>Practice setting</b>			
Number of general dental practices attended	1.23 (0.04)	1.23 (0.03)	--
Number of specialty practices attended	0.10 (0.03)	0.17 (0.02)	--
Practice busyness rating	2.07 (0.07)	2.40 (0.05)	*
<u>Typical time a patient has to wait ...</u>			
for a new patient exam appointment (in days)	25.24 (1.90)	16.85 (1.40)	*
for a restorative dentistry appointment (in days)	21.73 (1.55)	14.55 (1.14)	*
in waiting room (in minutes)	15.29 (0.68)	11.08 (0.50)	*
Percent of visits in practice due to unscheduled care	12.08 (0.72)	7.64 (0.53)	*
Number of patient visits each week done by dentist	64.02 (2.10)	52.80 (1.55)	*
Number of hours each week in direct patient care	31.59 (0.56)	32.13 (0.41)	--
Number of dental chairs regularly used	5.50 (0.21)	4.12 (0.15)	*
Number of full-time staff	4.01 (0.15)	3.72 (0.11)	--
Number of part-time staff	2.32 (0.10)	1.72 (0.07)	*
<b>Patient population</b>			
<u>Percent of patients who are ...</u>			
covered by a private insurance program	43.92 (1.62)	55.59 (1.19)	*
covered by a public program	15.38 (0.93)	7.87 (0.68)	*
not covered by any third party and pay own bills	37.41 (1.58)	33.56 (1.16)	*
not covered and receive free or reduced-fee care	2.34 (0.42)	2.41 (0.31)	--

<u>Percent of practice charges derived from ...</u>			
dental insurance	49.22 (1.50)	52.36 (1.11)	--
self-pay	41.45 (1.50)	41.15 (1.11)	--
unpaid bills	5.12 (0.43)	4.45 (0.32)	--
other	2.98 (0.45)	0.96 (0.33)	*
Percent of patients on extended payment schedules	11.73 (1.65)	16.25 (1.22)	*
<u>Percent of patients who ...</u>			
seek care soon enough	48.66 (1.52)	65.07 (1.11)	*
fear dentists	42.95 (2.09)	33.86 (1.54)	*
visit dentists more often than necessary	3.41 (0.35)	3.79 (0.26)	--
complain about waiting	7.28 (0.89)	4.75 (0.65)	*
pay their bills	81.36 (1.93)	86.67 (1.43)	*
follow advice about dental hygiene	47.44 (1.69)	57.70 (1.25)	*
show for appointments as scheduled	82.74 (0.73)	86.76 (0.54)	*
take responsibility for their oral health	58.64 (1.61)	71.32 (1.19)	*
treat me with the respect that I deserve	81.24 (1.94)	87.71 (1.43)	*
want to know details about condition of their mouths	63.45 (2.07)	71.74 (1.52)	*
want to know details about their treatment options	71.26 (1.82)	74.40 (1.34)	--
use credit cards to pay for their treatment	18.08 (1.04)	19.87 (0.78)	--
<u>Percent of patients who are ...</u>			
1-18 years old	14.93 (0.55)	14.56 (0.40)	--
19-44 years old	30.37 (0.73)	29.60 (0.53)	--
45-64 years old	36.09 (0.77)	35.28 (0.57)	--
65 years old or older	17.93 (0.71)	19.92 (0.52)	*
<u>Percent of patients who are ...</u>			
non-Hispanic White	56.48 (1.31)	68.39 (0.97)	*
non-Hispanic Black	36.41 (1.24)	25.23 (0.92)	*
Hispanic	3.73 (0.32)	3.47 (0.23)	--
of Asian descent	2.44 (0.22)	1.95 (0.16)	--
of other ethnicity	0.29 (0.09)	0.27 (0.07)	--
<b>Dental procedure characteristics</b>			
For dental extractions ... what percent are replaced eventually by ...			
Fixed bridge	21.17 (1.70)	35.74 (1.25)	*
Removable partial or full denture	35.55 (1.28)	27.93 (0.94)	*

Dental implant	1.94 (0.59)	4.81 (0.43)	*
Not replaced	40.56 (1.60)	30.51 (1.18)	*
Other	0.02 (0.03)	0.07 (0.03)	--
Number dental extraction patients each month	33.73 (1.54)	19.90 (1.10)	*
<u>Percent patient contact time dentist spends doing...</u>			
non-implant restorative dentistry	47.78 (1.62)	60.87 (1.19)	*
dental implants (surgery or prosthetic time)	1.12 (0.32)	1.77 (0.24)	--
removable prosthetics	16.89 (1.17)	9.39 (0.86)	*
dental extractions	12.15 (0.54)	7.96 (0.40)	*
periodontal therapy (surgical and non-surgical)	4.28 (0.38)	3.26 (0.28)	*
endodontic (surgical and non-surgical)	8.62 (0.55)	6.78 (0.40)	*
other (preventive and diagnostic)	8.47 (0.63)	9.27 (0.46)	--
<u>Typical fee for a ...</u>			
2-surface amalgam	59.49 (1.79)	68.93 (1.35)	*
3-canal molar root canal	366.83 (15.50)	422.31 (11.97)	*
Single uncomplicated extraction	59.13 (1.53)	66.32 (1.15)	*
Cast partial denture	590.52 (20.73)	740.14 (15.33)	*
Full denture	613.87 (24.62)	752.93 (17.97)	*
Porcelain-to-metal crown	467.56 (11.29)	537.40 (8.31)	*
<u>Percent of procedures you refer to other dentists...</u>			
Periodontal surgery	68.15 (2.95)	79.22 (2.17)	*
Prosthetic crowns and bridges (other than implants)	3.23 (0.85)	1.43 (0.63)	--
Implant surgery	87.71 (2.45)	87.15 (1.81)	--
Implant restorations	37.48 (3.28)	29.11 (2.41)	*
Full dentures	13.07 (2.35)	14.72 (1.74)	--
Removable partial dentures	1.35 (0.51)	1.64 (0.38)	--
Anterior tooth root canals	14.78 (2.76)	31.16 (2.04)	*
Molar tooth root canals	56.52 (3.03)	64.38 (2.24)	*
Endodontic surgery	82.84 (2.25)	87.10 (1.67)	--
Non-surgical extractions	10.23 (2.52)	28.40 (1.86)	*
Surgical extractions	52.78 (2.88)	65.47 (2.12)	*
Orthodontics	92.19 (1.53)	95.71 (1.13)	--
<u>Percent of patients who receive the following services at some time while in your practice...</u>			
Dental x-rays	97.06 (0.50)	98.33 (0.37)	*

Diet counseling	17.27 (1.91)	20.88 (1.41)	--
Blood pressure screening	33.63 (2.58)	27.73 (1.90)	--
Oral cancer screening examination	92.73 (1.04)	94.83 (0.77)	--
Oral hygiene instruction	82.69 (1.35)	90.97 (0.99)	*
In-office fluoride application	45.36 (2.20)	46.27 (1.62)	--
Fluoride gel/rinse prescribed/recommended for home	24.49 (1.78)	27.28 (1.31)	--
Patient education from written pamphlets	33.54 (2.20)	33.93 (1.62)	--
Patient education from videos or slides	10.84 (2.00)	10.91 (1.47)	--
Intraoral photographs taken	3.58 (0.98)	7.41 (0.72)	*
Intraoral video images taken	8.03 (1.70)	11.23 (1.25)	--
<b>Dentist individual characteristics</b>			
Dentist's current age	50.14 (0.67)	51.69 (0.49)	--
Last two figures of dentist's graduation year	74.48 (0.70)	72.90 (0.52)	--
<u>Amount of agreement with these statements...</u>			
Patients should seek second opinions ...	4.15 (0.06)	4.11 (0.04)	--
Patients are better off not knowing all the facts ...	1.75 (0.09)	1.78 (0.06)	--
Dentists should present all treatment options ...	5.32 (0.08)	5.24 (0.06)	--
... dentist should try to convince the patient to accept it.	3.56 (0.09)	3.37 (0.07)	--
... the patient should be dismissed from practice.	2.42 (0.07)	2.26 (0.06)	--

Means and standard errors were calculated using the SAS<sup>®</sup> GLM procedure. Statistical tests of differences in means approach to care were done using an analysis of variance with approach to care as the only main effect (SAS<sup>®</sup> GLM procedure, LSMEANS option). Least-squared means are adjusted for unequal sample sizes between subgroups.

\* indicates that the approach to care main effect was statistically significant

**Table 4. Statistical significance of race, income, and approach to care in regressions where all three variables were structured as main effects**

Dental practice characteristic	race	income	approach to care
<b>Practice setting</b>			
Number of general dental practices attended	*	--	--
Number of specialty practices attended	--	--	--
Practice busyness rating	--	--	*
<u>Typical time a patient has to wait ...</u>			
for a new patient exam appointment (in days)	--	--	*
for a restorative dentistry appointment (in days)	*	--	*
in waiting room (in minutes)	*	*	*
Percent of visits in practice due to unscheduled care	--	--	*
Number of patient visits each week done by dentist	--	--	*
Number of hours each week in direct patient care	*	--	--
Number of dental chairs regularly used	--	--	*
Number of full-time staff	--	--	*
Number of part-time staff	--	--	*
<b>Patient population</b>			
<u>Percent of patients who are ...</u>			
covered by a private insurance program	*	*	*
covered by a public program	*	--	*
not covered by any third party and pay own bills	--	--	--
not covered and receive free or reduced-fee care	--	--	--

<u>Percent of practice charges derived from ...</u>			
dental insurance	--	--	--
self-pay	--	--	--
unpaid bills	--	--	--
other	--	--	*
Percent of patients on extended payment schedules	--	--	--
<u>Percent of patients who ...</u>			
seek care soon enough	*	--	*
fear dentists	*	--	*
visit dentists more often than necessary	--	--	--
complain about waiting	--	--	--
pay their bills	--	--	--
follow advice about dental hygiene	*	--	*
show for appointments as scheduled	*	--	*
take responsibility for their oral health	*	--	*
treat me with the respect that I deserve	*	--	--
want to know details about condition of their mouths	--	--	*
want to know details about their treatment options	--	--	--
use credit cards to pay for their treatment	--	*	--
<u>Percent of patients who are ...</u>			
1-18 years old	--	*	--
19-44 years old	--	--	--
45-64 years old	--	--	--
65 years old or older	--	--	*
<u>Percent of patients who are ...</u>			
non-Hispanic White	*	*	*
non-Hispanic Black	*	*	*
Hispanic	--	--	--
of Asian descent	--	--	*
of other ethnicity	--	*	--
<b>Dental procedure characteristics</b>			
For dental extractions ... what percent are replaced eventually by ...			
Fixed bridge	*	*	*
Removable partial or full denture	*	--	*

Dental implant	*	--	*
Not replaced	*	*	*
Other	--	--	--
Number dental extraction patients each month	--	--	*
<u>Percent patient contact time dentist spends doing...</u>			
non-implant restorative dentistry	*	--	*
dental implants (surgery or prosthetic time)	--	--	--
removable prosthetics	*	--	*
dental extractions	*	--	*
periodontal therapy (surgical and non-surgical)	--	--	--
endodontic (surgical and non-surgical)	--	--	*
other (preventive and diagnostic)	--	--	--
<u>Typical fee for a ...</u>			
2-surface amalgam	*	--	*
3-canal molar root canal	*	*	--
Single uncomplicated extraction	*	--	*
Cast partial denture	*	--	*
Full denture	*	--	*
Porcelain-to-metal crown	*	--	*
<u>Percent of procedures you refer to other dentists...</u>			
Periodontal surgery	--	--	*
Prosthetic crowns and bridges (other than implants)	--	--	--
Implant surgery	--	--	--
Implant restorations	--	--	--
Full dentures	--	--	--
Removable partial dentures	--	--	--
Anterior tooth root canals	*	--	*
Molar tooth root canals	--	--	--
Endodontic surgery	--	--	--
Non-surgical extractions	*	--	*
Surgical extractions	--	--	*
Orthodontics	--	--	--
<u>Percent of patients who receive the following services at some time while in your practice...</u>			
Dental x-rays	--	--	--

Diet counseling	--	--	--
Blood pressure screening	--	--	--
Oral cancer screening examination	--	--	--
Oral hygiene instruction	*	*	*
In-office fluoride application	--	--	--
Fluoride gel/rinse prescribed/recommended for home	*	--	--
Patient education from written pamphlets	*	--	--
Patient education from videos or slides	--	--	--
Intraoral photographs taken	--	--	*
Intraoral video images taken	*	--	--
<b>Dentist individual characteristics</b>			
Dentist's current age	--	--	*
Last two figures of dentist's graduation year	--	--	*
<u>Amount of agreement with these statements...</u>			
Patients should seek second opinions ...	--	--	--
Patients are better off not knowing all the facts ...	*	--	--
Dentists should present all treatment options ...	--	--	--
... dentist should try to convince the patient to accept it.	--	--	--
... the patient should be dismissed from practice.	--	--	--

Means and standard errors were calculated using the SAS® GLM procedure. Statistical tests of differences in means by race, household income, and approach to care were done using an analysis of variance with race, income, and approach to care as main effects, with no interaction terms (SAS® GLM procedure, LSMEANS option). Least-squares means are adjusted for unequal sample sizes between subgroups.

\* indicates that the main effect variable was statistically significant