

Impacts of Community-Based Training Programs on Oral Health Service Delivery at Federally Qualified Health Centers

Simona Surdu, MD, PhD, Margaret Langelier, MSHSA, and Jean Moore, FAAN, DrPH
 Oral Health Workforce Research Center, Center for Health Workforce Studies, University at Albany

ABSTRACT

Purpose: Recruiting and retaining an oral health workforce is essential for federally qualified health centers (FQHCs) to respond to increasing demand from safety net patients for oral health services. This study sought to understand the impacts of participation by FQHCs with dental residency programs as well as community service learning/externships for dental students on service capacity.

Methods: The study used an electronic survey of 1,178 FQHCs to collect data on oral health service capacity, the types of services provided to patients, and participation with residency or student externship programs in 2016. A contact list for FQHCs was developed from a variety of sources including federal grant listings and a membership list from the National Network for Oral Health Access (NNOHA). Chi-square, T-test, and Wilcoxon signed-rank tests to compare oral health service delivery in the FQHCs by their participation with a dental education program.

Results: At survey closure, 304 FQHCs had completed the survey (25.8% response rate). Just 14.7% of respondents participated in dental residency programs, while 39.1% participated in dental student externship programs. About 55.0% of FQHCs sponsoring dental residency rotations and 44.7% sponsoring dental student externships had hired at least 1 new dentist following completion of a residency or externship at the clinic. FQHCs hosting a dental education program had a significantly higher average number of dentists ($P=0.016$) and fixed dental operatories co-located ($P<0.0001$) or in a separate location from a primary care clinic ($P=0.018$) as well as a higher prevalence of oral health services provided to children and/or adults ($P<0.005$) compared with FQHCs without a dental education program.

Discussion: Dental student externships and dental residencies serve as a pipeline for FQHCs to hire new dentists. Participation with educational programs appears to be alleviating some of the difficulties FQHCs encounter when recruiting dentists to work in the safety net.

CONTACT

Oral Health Workforce Research Center
 Center for Health Workforce Studies

518-402-0250
 info@oralhealthworkforce.org
 www.oralhealthworkforce.org



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BACKGROUND

- One strategy of FQHCs to ensure sufficient workforce capacity to meet patient demand for oral health services is participation in dental student externship/community service learning programs and/or dental residency programs.
 - Dental residents and student externs enlarge workforce capacity, improve workflows, and increase efficiency of oral health service delivery in many health centers.
 - Dental students and residents are also a potential source of new workforce for safety net health centers.
- This study aimed to describe FQHCs' participation in dental education and dental residency programs and to determine whether this participation created a pipeline for recruitment of dentists to work in safety net organizations.

METHODS

- Utilized a web-based survey. An email solicitation was sent to dental directors or chief executive officers of 1,257 health centers with FQHC designation in 2016. Ninety seven emails were undeliverable, reducing the number of possible respondents to 1,178 FQHCs.
- Data collected included information on oral health service capacity, types of services provided to patients, and participation with residency or student externship programs
- Survey data was analyzed using descriptive statistics, chi-square testing, t-tests, and Wilcoxon signed-rank tests. Significance was defined as $P<0.05$ using 2-tailed tests.

RESULTS

- At survey closure, 304 FQHCs had completed the survey for a response rate of 25.8%.
- Approximately 81% of FQHCs provided direct oral health services to patients in their clinics. More than 88% provided oral health preventive services.
- Average # of fixed dental clinics (co-located or adjacent to a primary care clinic) was 2.3; average # of operatories was 11.8.

Table 1. Characteristics of Respondent FQHCs

Characteristics	Respondent FQHCs							
	All Patients		Patients <21 years old		Patients 21-65 years old		Patients >65 years old	
	n	%	n	%	n	%	n	%
Preventive services	263	88.9%	256	86.5%	245	82.8%	239	80.7%
Screening services	261	88.2%	252	85.1%	230	77.7%	228	77.0%
Diagnostic services	249	84.1%	241	81.4%	238	80.4%	233	78.7%
Restorative services	239	80.7%	225	76.0%	231	78.0%	224	75.7%
Oral surgery services	186	62.8%	165	55.7%	180	60.8%	176	59.5%
Denture services	175	59.1%	102	34.5%	169	57.1%	169	57.1%
Emergency/walk in services	237	80.1%	225	76.0%	228	77.0%	225	76.0%
Referral services	269	90.9%	261	88.2%	256	86.5%	252	85.1%
Vouchers for services from community dentists	39	13.2%	28	9.5%	37	12.5%	36	12.2%
Fixed Dental Clinics and Operatories	Co-located/Adjacent to a Primary Care Clinic (n=224)				In a Location Separate From a Primary Care Clinic (n=87)			
	Mean		Range		Mean		Range	
	2.3		1 to 18		1.8		1 to 11	
Number of Fixed Clinics	2.3		1 to 18		1.8		1 to 11	
Number of Operatories	11.8		1 to 85		11.5		1 to 204	

RESULTS

- In total, 43% (n=117) of respondent FQHCs participated with a dental education program (15% with a dental residency program, 39% with a dental student externship).

Table 2. FQHCs Participating in Dental Education Programs

Dental Education Programs	Any dental education program(s)		Dental residency program(s)		Dental student externship program(s)	
	FQHCs		FQHCs		FQHCs	
	n	%	n	%	n	%
Yes	117	43.2%	39	14.7%	104	39.1%
No	154	56.8%	226	85.3%	162	60.9%
Total	271	100.0%	265	100.0%	266	100.0%

- About 55% of FQHCs sponsoring dental residency rotations and 45% sponsoring dental student externships had hired at least 1 new dentist following completion of the program.

Table 3. FQHCs Hiring New Dentists Following Completion of a Dental Education Program at the FQHC

Hiring New Dentists Following Completion of a Dental Education Program	Dental residency program(s)		Dental student externship program(s)	
	FQHCs		FQHCs	
	n	%	n	%
Yes	21	55.3%	43	44.3%
No	17	44.7%	54	55.7%
Total	38	100.0%	97	100.0%

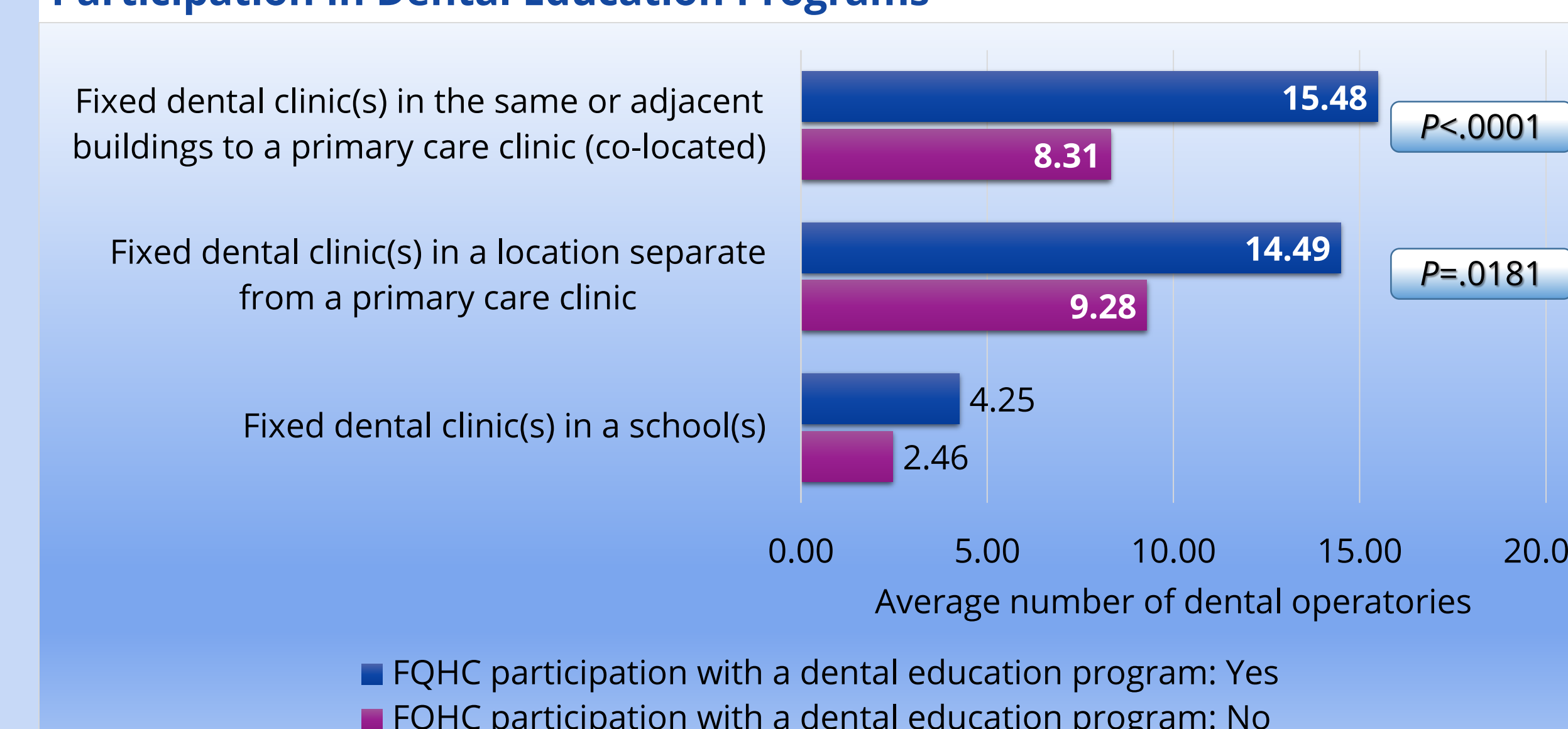
- FQHCs hosting a dental education program had a significantly higher average number of dentists providing services compared with FQHCs without a dental education program.

Table 4. Average Number of Dentists Providing Services at the FQHCs by FQHCs' Participation in Dental Education Programs

FQHCs Hosting a Dental Education Program	Number of Dentists Who Provided Services at the FQHCs			Two-Sided P Value	
	n	Mean	Range	T-Test	Wilcoxon
Full-time (FT) dentists					
Yes	112	5.03	1 to 42		
No	121	2.69	0 to 12		
Difference		2.34		.0002	.0157
Part-time (PT) dentists					
Yes	89	2.50	0 to 32		
No	93	1.52	0 to 5		
Difference		0.98		.0200	.5627

- FQHCs hosting dental education program(s) had a significantly higher average # of fixed dental operatories compared to those without education programs.

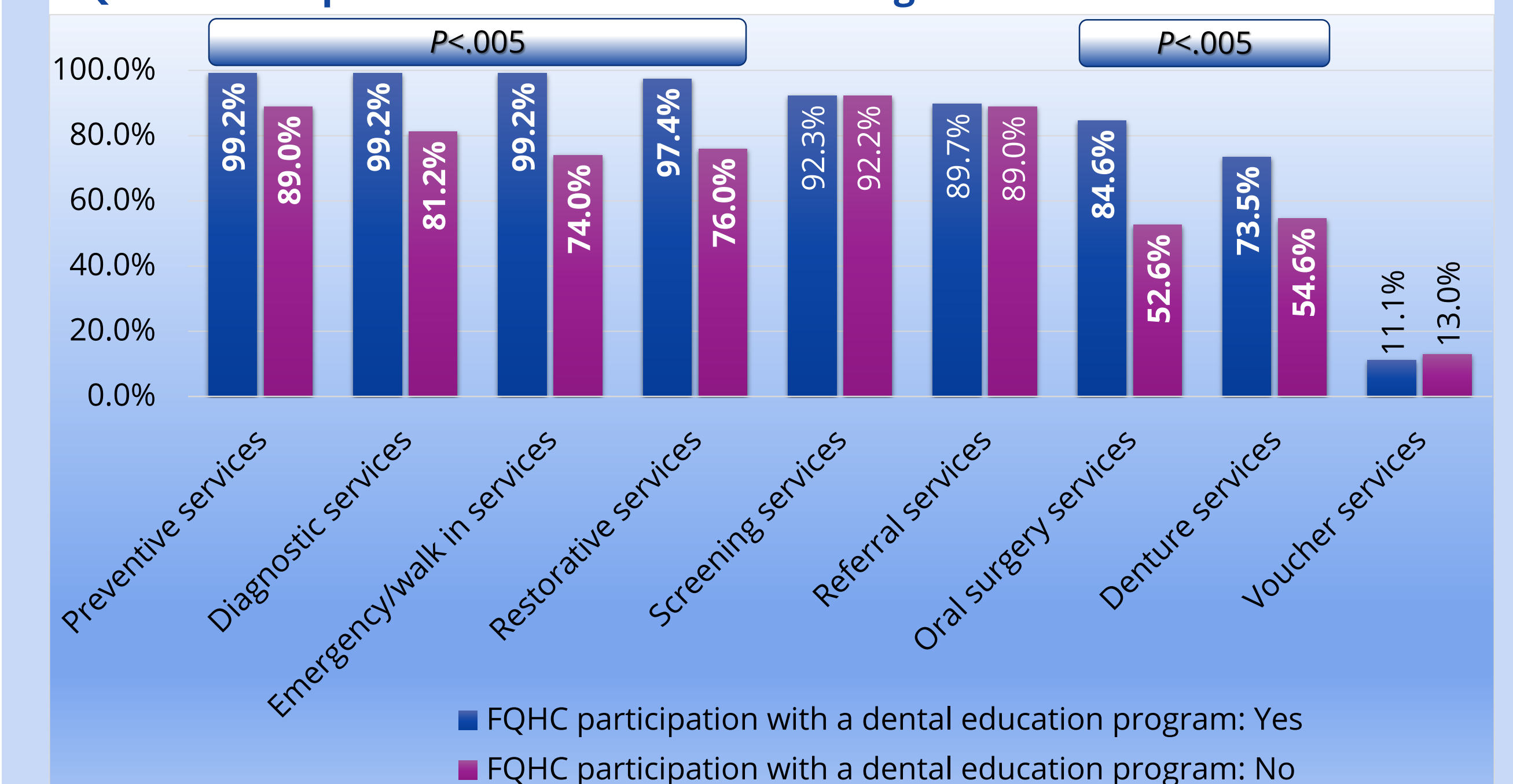
Figure 1. Average Number of Dental Operatories by Setting and FQHCs' Participation in Dental Education Programs



RESULTS (cont.)

- FQHCs hosting students/residents were more likely to provide preventive, diagnostic, restorative, oral surgery, emergency/walk-in, and denture services.

Figure 2. Proportion of Oral Health Services Provided at the FQHCs by FQHCs' Participation in Dental Education Programs



- Benefits of hosting dental programs included an increased capacity to meet the oral health needs of the FQHC's patients & the opportunity to recruit new dentists.

Table 5. Benefits for the FQHC From Hosting Dental Residency or Student Externship Programs

Benefits of Hosting a Dental Education Program	Dental residency program(s)		Dental student externship program(s)	
	FQHCs (n=39)		FQHCs (n=104)	
	n	%	n	%
Dental residents/student externs increase FQHCs capacity to meet the OH care needs of patients	35	89.7%	65	62.5%
Dental residents/student externs provide an opportunity to recruit new dentists to the FQHC	35	89.7%	77	74.0%
Dental residents/student externs contribute to greater flexibility in scheduling patients in the clinic	24	61.5%	45	43.3%
Hosting dental residents/student externs in clinical rotations positively contributes to staff retention	22	56.4%	46	44.2%
Hosting dental residents/student externs has a positive fiscal impact for the FQHC	22	56.4%	26	25.0%
Dental residents/student externs improve workflows in the clinic	15	38.5%	25	24.0%
Dental residents/student externs contribute to improved efficiencies for staff dentists	12	30.8%	33	31.7%

DISCUSSION

- Notable differences in FQHCs' ability to provide oral health services by their participation in dental education programs were related to both the size of the FQHC and its ability to engage dental residents and student externs in patient care.
- Hosting dental students and residents improves FQHCs' capacity to provide services and also provides a pipeline for new workforce.

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