Perceptions of Kansas Extended Care Permit Dental Hygienists' Impact on Dental Care

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Abstract

Purpose: In 2003, Kansas addressed their access to oral health care needs with amended state dental practice act for registered dental hygienists. The Extended Care Permits (ECP) I, II and III have expanded the dental hygiene scope of practice, allowing dental hygienists to provide oral care to Kansans in different settings beyond the dental office. The purpoase of this study was to examine the perceptions of Kansas ECP dental hygienists on change to oral care in Kansas.

Methods: A questionnaire was mailed to all ECP dental hygienists (n=158) registered with the Kansas Dental Board. Questions were open-ended, close-ended and Likert scale. Information was sought regarding demographics, areas of employment, work related activities and impact to oral health care. Study exclusions included ECP providers no longer practicing in Kansas, practice more than 50% in another state or no longer practice dental hygiene at all.

Results: A total of 69 surveys were returned,with 9 surveys excluded for exclusion criteria. Most respondents (92%) agreed the ECP is a solution to oral health care access issues in Kansas. Barriers to utilizing their permits fully included: difficulty locating a sponsoring dentist (12%), locating start up finances (22%), limited work space (14%) and difficulty with facility administrators (39%). Many respondents (62%) agreed the proposed registered dental practitioner would improve access to oral health care to Kansans.

Conclusion: The Extended Care Permit providers in Kansas appear to be satisfied with their current employment situations and feel oral health care has improved for their patients served but they are unable to utilize their permits fully for various reasons.

Keywords: dental hygienist, access to care, extended care permit, dental workforce

This study supports the NDHRA priority area, **Health Promotion/ Disease Prevention:** Identify, describe and explain mechanisms that promote access to oral health care, e.g., financial, physical, transportation.

Introduction

Access to care continues to draw significant concern and discussion among the dental community and social welfare advocates. Since its initial release in the year 2000, Oral Health in America: A Report of the Surgeon General has stimulated interest in the oral health disparities present in the U.S.[1] The Centers for Disease Control and Prevention released a progress report for the Healthy People 2010 initiative, a renewable 10 year agenda for improving the nation's health. Results indicated that despite numerous program implementations, little or no progress has occurred towards the goals of reducing or treating tooth decay in ages 6 to 44, reducing complete tooth loss in the 65 to 74 year old population, and increasing early detection of oral and pharyngeal cancer.[2]

Nearly one-third of U.S. citizens lack access to basic preventive dental health care services, mainly resultant from dental care costs and uneven geographic distribution of dental providers.[3] Kansas has a larger rural population, 37%, in comparison to the national average of 21%.[4] Eighty-nine out of 105 counties are classified as rural, concentrated in the western part of the state, with fewer than 40 persons per square mile.[5] Furthermore, 86% of the total Kansas counties lack adequate dental care services and are federally designated as dental health professional shortage areas (Figure 1).[6]

In 2009, the Kansas Bureau of Oral Health Workforce Assessment reported the average age of Kansas dentists (n=1,334) was 50 years old.[7] A majority of dentists working in rural areas plan to retire in the next 6 to 10 years, thus projecting a decreased supply of Kansas dentists by 2045.[8]

The University of Missouri-Kansas City (UMKC) Dental School is the nearest dental institution offering education of dentists, bordering the Kansas and Missouri state line, and would seemingly provide an abundance of dental graduates for the region.

However, many of the institution's dental graduates have chosen to begin their dental practices outside of Kansas adding the dilemma of a projected shortage of dentists in the state.[9] There are 5 dental hygiene academic programs in Kansas, and 2 additional programs are located in Missouri on the state line border. Of these locations, only one is located in rural western Kansas. An overwhelming majority of Kansas dentists and registered Kansas dental hygienists are concentrated in larger metropolitan areas located in the eastern half of the state.[5,10] It is logical to assume new graduates from these dental hygiene programs will continue to seek employment in large Kansas metropolitan areas and not less populated rural areas of Kansas.

Kansas Addresses Access to Care

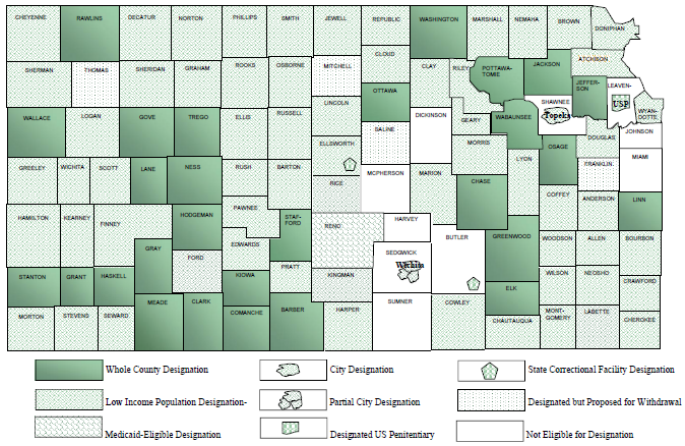
Kansas has struggled with their oral health disparity and has focused on how to provide preventive care to those in disadvantaged or underserved areas. Initially, Kansas addressed this in 1998 with a dental assistant model, termed scaling assistants. Tracking their impact to preventive oral care for the underserved population is difficult since scaling assistants are only required to register with the Kansas Dental Board after completion of approved courses. They are not required to maintain any licensure or registration, making the location of their practice and the populations served speculative.

Mitchell et al conducted a study examining the perceptions of Kansas dental hygienists and scaling assistants, then conducted a follow up study 5 years later.[10,11] Findings were that the majority of scaling assistants were working in metropolitan areas and not practicing in the rural and underserved areas thus not addressing the workforce needs for the underserved Kansas population as was the original intent.[11]

Kansas has since sought additional ways to increase the oral health care workforce to meet the needs of its citizens. In 2003, the Kansas Dental Board amended the dental practice act and expanded the dental hygiene scope of practice with the Extended Care Permit I (ECP I) thus creating an alternative practice model for dental hygienists. This workforce model works in collaboration with a sponsoring dentist, providing preventive services to targeted populations.[12]

In 2007, the dental practice act further expanded the scope of dental hygiene practice by creating the ECP II workforce model, allowing for a greater range of locations and populations for ECP providers to address preventive oral health care needs (Table I). All ECP providers are required to maintain registration with the Kansas Dental Board which serves to track the actual number of providers and their primary work locations.[12]

Figure 1: Kansas Department of Health and Environment Bureau of Local and Rural Health Dental HPSAs



As of October 7,2011

In 2011, Delinger et al conducted a study examining the experiences of ECP providers.[13] Results supported the positive impact on preventive oral health care in Kansas to the targeted populations. Barriers were encountered, including locating start up funding, lack of support from facility administrators and even dentists. In spite of various challenges, these dental hygienists have a great entrepreneurial spirit, have developed a solid network of support and have found ways to sustain the ECP practice.

A dramatic increase in the number of patient contacts in safety net clinics, a main hub for many ECP providers, was noted, rising from approximately 5,000 patient contacts in 2007 to over 30,000 in 2010.[13] Many of the patients served by ECP providers would not have access to preventive care from any other source. In the absence of safety net dental clinics, individuals in oral pain may seek care in their local hospital emergency room.[14]

The financial burden of dental related ER visits cannot be underestimated. Kansas reported more than 17,500 dental-related visits to emergency care facilities in 2010.[7] From 2006 to 2009, there was a nationwide 16% overall increase in emergency room visits that resulted in a primary diagnosis of preventable dental conditions; some metropolitan areas reporting at least 20% where patients visited multiple times for the same condition.[14,15] Most treatment involves a prescription for antibiotics and pain medications which fail to address the core of the dental need.[16] It has been estimated

Table I: Kansas Extended Care Permit I and II Regulations

	ECP I	ECP II	ECPIII
Population Served	• Low income children • Adults in prison • Federally qualified health centers • Local health department	• Same as ECP I • Persons over age 65 • Special health care needs population	• Same as ECP I and ECP II
Requirements	• At least 1200 clinical hours, or Dental hygiene instruction of at least 2 years in the previous 3 years • Maintain CPR certification • Dentist sponsorship with signed agreement • Maintain professional liability insurance	• At least 1800 clinical hours, or Dental hygiene instruction of at least 2 years in the previous 3 years • Six additional training hours, specific for care of special needs patients • Complete minimum of 6 hours continuing education in area of special needs care every 2 years • Dentist sponsorship with signed agreement • Maintain professional liability insurance	• At least 2000 clinical hours, or Dental hygiene instruction of at least 3 years in the previous 4 years • Completion of 18 hour KS Dental Board approved course • Maintain CPR certification • Dentist sponsorship with signed agreement • Maintain professional liability insurance
Scope of Practice	• Prophylaxis, fluoride application, patient education and assessments	• Same as ECP I • Removal of overhang restorations and periodontal dressings, administer local block and infiltration anesthesia and nitrous oxide (under general supervision)	• Same as ECP I and ECP II • Identify decay, remove with hand instrument and place temporary filling, glass ionomer or other palliative material • Denture adjustments, soft relines • Smooth sharp teeth with slow speed handpiece Simple extractions of deciduous teeth Application of topical, local and block anesthetic
Location of Practice	• Schools, health departments, correctional facilities • Head Start programs	• Same as ECP I • Adult care homes, hospital long-term units, state institutions, homebound patients	• Same as ECP I and ECP II

Source: Kansas Dental Board

that hospital dental treatment is nearly 10% more expensive than the cost of preventive dental care in a private practice dental setting.[14] For many states who already have strained budgets, the quest is on to identify cost-effective alternatives to provide access to dental care beyond the emergency room.

The Future of Kansas Oral Care Providers

Kansas is seeking to continue the positive impact of the ECP providers on oral health care to underserved populations. In 2012, Kansas legislation expanding the dental hygiene scope of practice further with the ECP III (Table I).[17] Proposition for a new model, the registered dental practitioner, was introduced but did not pass Kansas legislation in 2012 due to strong opposition from the Kansas Dental Association. This midlevel dental workforce model was proposed to be an advanced degree dental hygienist, similar to Minnesota's Advanced Dental Therapist.[18]

The approval for the ECP III in 2012 and the increasing drive for the RDP show a strong desire by Kansas to address what remains to be a dilemma: there are many individuals who are lacking adequate dental care. With geographic barriers in rural western Kansas and the projected shortage of den-

tists in the next decade, the quest is to incorporate a workforce model that is most effective to provide dental services to the populations in need or utilize a combination of models to best provide access to dental care.

Since 2008, there has been nearly 33% increase in the number of ECP providers registered with the Kansas Dental Board, with a total of 158 ECP providers as of 2011.[19] Yet even with the steady increase of ECP providers since the legislation passed in 2003, there continues to be rural populations in Kansas who still lack access to oral health care.[20] Delinger's 2011 study provided encouraging evidence of the ECP's positive impact for school-aged children, elderly and special needs patients.[13] The Kansas ECP model closely resembles the Limited Access Permit dental hygienists in Oregon, serving similar populations and locations of practice and are well received by the patients they serve and the collaborating dentists with whom they work with documented success.[21]

Because of the qualitative study design used in Delinger's research, only a limited number of ECP providers were studied.[13] The purpose of this study, therefore, was to explore the entire population of ECP providers regarding perceptions of their positive impact to oral care in Kansas.

Methods and Materials

Subjects/Population

All Kansas dental hygienists who were registered with the Kansas Dental Board as having obtained either an ECP I and/or ECP II permit were invited to participate. At the time of this study, there were 158 dental hygienists with such permits, therefore a total of 158 surveys were mailed to eligible participants. In order to achieve the maximum response rate, the surveys were mailed in paper format with a 4 week response period.[22] The following groups were excluded from the study: dental hygienists no longer practicing, dental hygienists no longer practicing in Kansas and dental hygienists who practiced more than 50% of their time in another state. All of the participants were asked to return the survey unanswered in a postage provided envelope.

Instrumentation and Measurement

A survey instrument developed by Mitchell et al examining workforce issues in Kansas was modified for use in this study.[10] The questionnaire consisted of 3 sections with open-ended, close-ended and rank-scaled questions. Respondents were asked to write explanations and comments on the open-ended questions and on close-ended dichotomous yes or no questions.

Demographic information was collected, including the education level of the dental hygienists and the county and practice setting of the groups. Perceptions from survey participants regarding the proposed ECP III and the registered dental practitioner were also requested.

A pilot test on a convenience sample of 10 dental hygienists and dental hygiene educators was conducted prior to the initial mailing to determine validity of the survey. The final questionnaire, cover letter and research design was approved by the Social Sciences Institutional Review Board at UMKC.

Data Collection

Surveys were mailed in the summer of 2012 to a total of 158 participants. Each dental hygienist was asked to complete the survey and return it in the self-addressed, stamped envelope provided in the initial mailing. To ensure anonymity and confidentiality, no coding remarks or labeling of any survey instrument was used. To encourage optimal response rates, a follow-up postcard was mailed 2 weeks after the initial mailing. The data collection period was a total of 4 weeks.

Results

Data were analyzed utilizing SPSS version 19. Of the 158 surveys mailed, 69 were returned, yielding a 44% response rate. Nine surveys were not included due to the exclusion criteria. The remaining 60 surveys (39%) were utilized for data analysis.

Demographics

The target population was Kansas ECP providers. Table II describes the demographic information, including total years of hygiene practice. The response overlap to the question of practice location prior to obtaining their ECP may be due to previous dental hygiene activity in multiple settings.

Areas of Employment

The ECP providers reported utilizing their permits in a variety of settings. Nearly half of ECP respondents (46%) indicated working in 4 or more different locations. Many of these included different schools and HeadStart centers. Other locations included safety net facilities, hospitals, WIC centers, special needs clinic, volunteer services, nursing homes, dental clinics without a full time dentist, homeless shelters and health departments. Several respon-

dents indicated the importance of their ability to go to the patients to provide care instead of having the patient come to them, allowing "children with limited resources to remain in school and be seen. The barriers such as transportation, time off work have been eliminated for preventive care."

ECP-Related Work Activity

The respondents reported spending 1 to 60 hours per week performing ECP related activities, as reported in Table II. Some respondents reported having an ECP permit but were not using it for work related purposes (35%, n=19). Reasons for not actively using the ECP permits were varied. Some were unable to locate a sponsoring dentist or lacked support from local dentists in their community. Others expressed an interest in utilizing their permit on a part-time basis and were unable to find a location or opportunity in which to use it, stating "The clinic was closed because there was no more budget." Finding time outside of a full time private practice schedule was a limiting factor for some ECP permit holders: "No part time opportunities. Federal grants not renewed." The physical strain of transporting the equipment was also cited as an obstacle to full use of the ECP permit as was the frustration of limited funding and clinic closures due to budget cuts that eliminated an employment hub for ECP providers.

Perceptions of Impact to Care

Overall, most participants were satisfied with their current position as an ECP provider (70%, n=42). The ECP appears to be providing dental care to many underserved populations in Kansas. Nearly half on respondents (48%, n=28) agreed they were able to use their ECP to the fullest extent. Those who felt they were able to utilize their ECP fully also had the most perceived support from their sponsoring dentist ($r=0.438$, $p<0.05$).

Table II: Demographic and practice characteristics of the Kansas ECP dental hygiene respondents (n=60)

	Total Respondents	Number	Valid Percentage
Age	58		
25 to 34		14	24%
35 to 44		10	17.1%
45 to 54		21	36.2%
55 to 66		13	22.2%
Gender	58		
Female		57	98.3%
Male		1	1.7%
Dental Hygiene Education	58		
Associate Degree		32	55.2%
Bachelor's Degree		23	39.7%
Master's Degree		3	5.2%
Years of Active Dental Hygiene Practice	58		
1 to 5 years		8	13.8%
6 to 10 years		11	19%
11 to 15 years		8	13.8%
16 to 20 years		6	10.3%
21 to 25 years		6	10.3%
26+		19	32.8%
Prior Location of Dental Hygiene Practice	58		
Private Practice		54	93.1%
Public Health		11	19%
Dental Hygiene Educational Institution		3	5.2%
Number of Locations for ECP Dental Hygiene Practice	60		
1		14	34.1%
2		8	19.5%
3		0	0
4+		19	46.3%
Number of Hours for Weekly ECP Activity	55		
Less than 1		21	38.1%
1 to 10		14	25.4%
11 to 20		9	16.3%
21 to 30		3	5.4%
31 to 40		7	12.7%
41 to 50		0	0
51 to 60		1	1.0%
ECP Related Work Activity			
Preventive Scaling		38	55.1%
Fluoride Application		38	55.1%
Oral Hygiene Instruction		38	55.1%
Patient Assessment		36	52.2%
Other DDS Delegated Activities		33	47.8%

*Valid percentage does not include non-responses; percentages calculated from total responses for each question.

Conversely, many ECP respondents felt they were not utilizing the permit to its fullest extent (52%, n=30). Many cited barriers, as seen in Table III, including a "too restrictive scope of practice" for the ECP, "billing cannot be done directly to a hygienist," "lack of equipment to travel to nursing homes" and "objections from the dentists in my area." When asked if their sponsoring dentists felt the ECP was a solution to manpower issues in Kansas, nearly 22% (n=13) of the ECP providers surveyed for this research indicated their sponsoring dentists felt the ECP was not a solution to manpower issues in Kansas. One respondent stated they "work full time, need the steady flow in income, sponsoring dentist is not supportive and is only one I've found."

Many respondents (62%, n=37) agreed the proposed registered dental practitioner would improve access to dental care in Kansas, yet only 45% (n=24) would be interested in pursuing this license if available. Reasons for this included a career nearing retirement and the perceived lack of support from "dentists willing to help out." Over half (52%) indicated they plan to use their ECP for 10 years or less.

Respondents strongly agreed their permits are part of a solution to access to care issues in Kansas (92%, n=55) and felt their permits have a positive impact on dental care (93%, n=54). Likewise, they feel dental care has improved for the patients they serve (71%, n=42). One respondent commented: "I work in public health and we target southeast Kansas schools, HeadStart and WIC with our ECP license. This is a very low income area that does not go to the dentist. ECP allows us to go to them." A majority (57%, n=33) of respondents agreed their sponsoring dentist viewed the ECP as one solution to access to dental care in Kansas.

Discussion

This study was designed to investigate the perceptions of Kansas ECP providers' positive impact to dental care. A large majority of survey respondents (93%, n=54) felt the ECP has increased access to dental care in Kansas. This study echoes a previous study on the critical role and impact the ECP has had on reaching targeted underserved populations.[13] Encouraging statements from ECP's were: "provide services to many children who have never seen a dentist," "provide preventive services so kids can stay in school," "nursing home patients stay in their area" and "special needs do not have to travel."

The dental benefit to Kansas children will presumably continue to increase since Kansas passed legislation for the ECP III in 2012. The ECP III will increase the dental hygiene scope of practice for specially trained hygienists and includes provisions to place temporary fillings, extract loose baby teeth and adjust dentures.[12] The ECP III has gone beyond a preventive scope of practice and allows for limited restorative dental treatment.

Table III: Perceived Barriers Preventing Full Utilization of the ECP

	Response	n*	Percent
Difficulty locating start up finances	Yes No	13 46	22 78
Difficulty locating sponsoring dentist	Yes No	7 51	12.1 87.9
Limited space in work facility	Yes No	8 51	13.6 86.4
Obstacles with facility administrators	Yes No	23 36	39 61
Inadequate number of patients available for services	Yes No	6 53	10.2 89.8
Other barriers	Yes No	23 36	39 61

All 3 ECP permits are designed to allow dental hygienists to reach populations who are unable to receive traditional dental care in a private office, yet the fundamental focus for each permit is preventive care. The limited restorative capacity of the ECP III has been termed a "baby step" towards providing dental services to the underserved and many organizations are still advocating for a midlevel dental provider in Kansas.[12,13] The registered dental practitioner would fill a gap that still exists. Legislation for a midlevel dental provider with more restorative capabilities, the, was introduced in 2012 and was strongly opposed by the Kansas Dental Association.

Although the ECP is providing preventive dental services, some of the ECP providers surveyed felt their scope of practice was limited with statements such as: "we see several kids in schools and they continue to have untreated decay that an registered dental practitioner could fix in the school setting, truly removing all barriers to access. ECP helps but no solution since a large percentage of our patients need more than just preventive care."

When asked to explain if the ECP has increased access to dental care in Kansas, one respondent commented: "In a limited manner, yes. Cleanings and sealants in schools are beneficial but this is the tip of the iceberg." The inability of the ECP to provide restorative services has been suggested pre-

viously as an obstacle to providing complete oral health care in school children and nursing home residents.[13] Painful and unhealthy oral conditions are present in patients that an ECP provider cannot provide and a dentist referral may be several miles from the patient's location.[13]

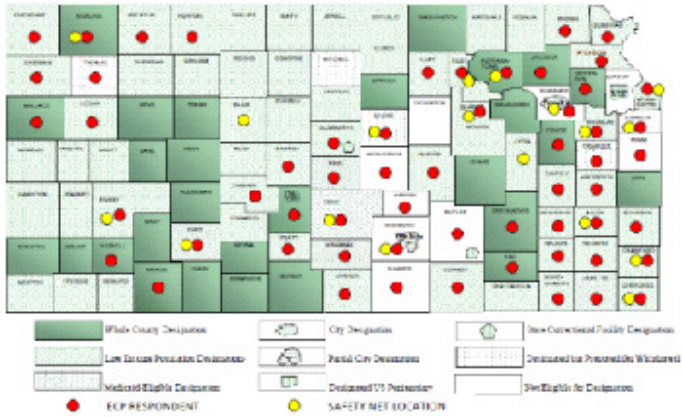
In 2011, Simmer-Beck et al released a report describing the outcome of the Miles of Smiles program, a collaborative effort between UMKC School of Dentistry, the Olathe Kansas School district (in suburban Kansas City) and Kansas ECP providers.[23] Miles of Smiles utilizes portable dental equipment, ECP providers, UMKC dental hygiene students (as an academic service learning assignment) and volunteer dentists to provide dental screenings, preventive dental treatment and referrals for restorative dental needs at local schools in Olathe. Johnson County, one of the most densely populated in Kansas, has only 1 clinic for uninsured low income people. Of the 7 Medicaid dental providers listed, Simmer-Beck et al identified only 4 that were accepting new Medicaid patients. Upon end of school year evaluations, only 11% of the children who were referred for dental needs actually received dental care. Further research would warrant investigating obstacles in the transition process for these children.[23]

The Miles of Smiles program is successfully providing hands-on experiences for dental hygiene students, introducing them to the disparities that exist even in wealthy suburban areas and providing them with the opportunity to experience firsthand the delivery of comprehensive preventive services in an elementary school setting. The Miles of Smiles program along with other academic service learning components in the dental hygiene curriculum has resulted in increasing numbers of students making career choices in the public health sector.[24]

Advocating for more hygienists to obtain and utilize their ECP permits was suggested by more than one participant in the current survey. However, concern was noted about the ECP providers' geographic practice location to remain in "areas of need…afraid that distribution will follow same patterns" was cited by a respondent. Mitchell et al found that dental hygienists at the time were mainly located in metropolitan areas of Kansas and not in rural communities.[11]

The current survey asked the ECP providers to indicate the counties of practice for their permits. Fifty-eight out of 105 Kansas counties were listed by the respondents and all are within a 1 or 2 county radius of a safety net clinic which provides oral care to underserved populations regardless of ability to pay (Figure 2). The 60 ECP providers in this study

Figure 2: ECP Respondents by County and Safety Net Locations (n=60; 60/158=40%)



have shown to have a wide geographic reach in the state and are in areas of most need including counties with designations of health professional shortage areas, low income populations and Medicaid eligible.[6] This differs from Mitchell's ECP research which identified ECP location of practice mainly in metropolitan Kansas City and Wichita.[10,11] Some counties, mainly in western Kansas, were not represented in this survey but the indication of ECP's geographic expansion is encouraging.

In theory, the ECP providers should be able to reach as many target populations as allowed. The results of this survey indicate many ECP providers perceived numerous barriers that obstructed their ability to provide care. Difficulty locating a sponsoring dentist was found in this study. Similarly, lack of support from sponsoring dentists has been noted in past research.[13] One respondent stated, "most dentists in my rural area don't and won't employ a hygienist (I was told my assistants scale above the gums and I finish in 10 minutes!)." Other ECP providers indicated utilizing the ECP permit but are "limited by my sponsoring DDS" and "not doing very many cleanings due to objections from the dentists in my area." Kansas dentists also appear to be divided in their support or lack thereof for the ECP providers as one respondent described an encountered barrier: "other dentists in the area who do not help but do not support my sponsoring dentist." The dental community appears divided in the most efficient pathway and workforce model to deliver oral health care to the underserved Kansas populations.

Many in the Kansas dental community continue to seek innovative pathways for delivery of dental care to underserved populations. Although the legislation for the midlevel registered dental practitioner was not passed in early 2012, Fort Hays University is already committed to creating an educational program for midlevel practitioners.[25] The Kansas House Bill that created the new ECP III also includ-

ed provisions for increasing the number of dental student seats at UMKC School of Dentistry for Kansas students with the intention of these students returning to rural Kansas to practice upon graduation.[12] It is yet unknown if this strategy will indeed increase the number of dentists in rural Kansas.

The ECP permits allows opportunities for Kansas dental hygienists to expand their dental hygiene services outside of traditional dental settings. Similar to previous research, the ECP respondents to this survey were enthusiastic about their contribution to improve the dental care disparity in Kansas and their ability to take their career in a different direction.[13] Over half of the respondents reported ages over 45 and intended to utilize their ECP permits for 10 years or less. Perhaps exposure to service learning projects, such as UMKC's Miles of Smiles, will encourage dental hygiene graduates to pursue careers in alternative settings.

Limitations to this study include the self-reporting nature of survey research. Respondents may have varying interpretations of the scale-ranked questions and potential for internal bias is present. The ECP III was initiated into legislation at the time of the data collection for this study. Future research to determine the ECP providers' impact to care with the ECP III would be warranted.

Conclusion

Kansas ECP providers reported making a positive impact on the dental care to underserved populations. They are generally satisfied with the current utilization of their ECP permits and perceive the ECP to have increased access to dental care in Kansas. Barriers were noted, including lack of dentist support, limited scope of practice for preventive services only, and administrative obstacles. The ECP III, with very limited restorative capacity, was initiated immediately upon the launch of this survey therefore it is yet to be determined if this will impact the delivery of care to Kansas populations with limited or no access to dental care.

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