Rural Minority Student Engagement with a Healthcare Pipeline Program

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Rural communities are underserved by the medical profession. This shortage is particularly acute for minority rural communities lacking reliable access to minority healthcare professionals. This article reports the results of a study designed to understand the attitudes and responses of rural minority students who participated in a program designed to increase the number of rural physicians. Data were collected through interviews with students and program faculty as well as classroom observations and document analysis. Findings emphasized the importance of recognizing the needs of rural areas, networking between peers and rural professionals, understanding the steps required for receiving a medical degree, and acknowledging students' cultural capital related to rural communities. The article concludes with recommendations for educators focused on underrepresented student populations or specific community needs.

Over the past few decades increased attention has been given to the diversity of the nation's healthcare professionals. While numerous studies have emphasized a projected shortage of primary care and family practice doctors in the years to come (e.g., Prislin, Saultz, & Geyman, 2010), this scarcity is particularly acute for minority populations (Grumbach & Mendoza, 2008; Reede, 2003). A 2004 report by the National Academy of Science, for example, noted that Black, Hispanic, and Native American residents comprise over one-quarter of the U.S. population but constitute less than one-tenth of the nation's physicians. Adding to the complexity of a diverse workforce, fewer doctors live and work in rural areas when compared to more populated urban communities. Severe challenges to healthcare in America exist, and "rural areas often can be found to remain disproportionately disadvantaged" (Schmitz, Claiborne, & Rouhana, 2012, p. 2). Over half the regions with a federally designated doctor shortage are rural (Association of American Medical Colleges, 2012). These communities include underserved and vulnerable populations, such as the Alabama Black Belt region, the Mississippi Delta, the Appalachians, and the rural Midwest. Residents of these areas face higher than average rates of infant mortality, heart disease, and other illnesses (Eudy, 2009).

Colleges and universities have sought to alleviate the shortage of minority physicians, including those who live and practice in rural, underserved areas. To cultivate rural minority doctors, best educational practices identified by the American Academy of Family Physicians (2009) include a focus on students with rural backgrounds, an academic pipeline program, and the opportunity for residency training in rural settings. Among institutions that demonstrate these best practices is the University of Louisville School of Medicine, which offers a program where third- and fourth-year underrepresented medical students complete their training at a regional campus focused on rural practice. This program is one of numerous efforts offered through the University of Louisville Rural Scholars Initiative. The initiative starts after a student's junior year of high school and culminates in the opportunity to complete a rural residency (University of Louisville, 2012). Another best practice example is the Rural Physician Associate Program (RPAP) at the University of Minnesota, Duluth

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School of Medicine. The RPAP recruits students from rural backgrounds, provides residency training in rural areas of the state, and focuses attention on the needs of minority populations, including Native Americans (Rabinowitz, Diamond, Markham, & Worton, 2008). At the University of Alabama, the College of Community Health Sciences (CCHS) operates the nationally recognized Rural Minority Scholars Program as part of its Rural Health Leaders Pipeline initiative. The program provides intensive training for high-achieving minority students before their first year of college. In addition, the curriculum exemplifies the notion of the academic pipeline by offering continued support at key developmental transitions with the goal of increasing the number of minority students who successfully apply to medical school and return to practice in a rural community (CCHS, 2013).

Taken together, these programs highlight the potential of community engagement, encouraging colleges and universities to focus on "our most pressing social, civic, and ethical problems, to our children, to our schools, to our cities" (Boyer, 1996, p. 20). As defined by Boyer, community engagement entails responsive, ongoing, mutually beneficial partnerships between higher education institutions, professions, and communities (p. 22). Such efforts engage institutions of higher education with urgent social issues across multiple communities.

The purpose of this article is to understand the attitudes and experiences of students who participated in the Rural Minority Scholars Program (RMSP) at the University of Alabama. The program targets an urgent social need and promotes community awareness and engagement on the part of students, faculty, and practitioners. The research question that guided this study was: How does the RMSP curriculum convey the significance of community engagement to aspiring physicians? Data analysis offered insight into student development and awareness of professional community roles. The article provides implications and suggestions for others interested in developing educational programs focused on rural communities.

Diversity, Community Engagement, and Medical Education

As a significant social resource, healthcare professionals serve a crucial role in the well-being of communities and families. A racially diverse medical workforce increases access to care for underserved communities and enhances cultural competencies across the profession (Grumbach & Chen, 2006). Such diversity is vital to meeting the healthcare needs of a contemporary America. For example, Bodenheimer and Pham (2010) noted that minority physicians are more likely to work in minority or low-income communities, and over half of recently graduated African-American physicians plan for such a career (Cooper & Powe, 2004). Beyond issues of access, Ferguson and Candib (2002) emphasized how shared ethnic background or language positively influences the doctor/patient relationship. Accordingly, issues of race, ethnicity, and location are bound together in terms of reliable and trusted access to healthcare. Communities that are most in need of medical professionals are least likely to have them and are even less likely to have physicians of color. The inability of the medical profession (and by extension, those colleges and universities that train future physicians) to sustain a social responsiveness to underserved citizens has detrimental effects on individual health and community well-being.

One strategy commonly used to increase diversity within the medical profession is through preparation and enrichment programs, similar to models found in the science, technology, engineering, and mathematics (STEM) disciplines and applied professional fields (Grumbach & Chen, 2006). The goal of these programs is to inspire and sustain student interest in medicine from an early age. These programs adopt a pipeline approach, working with students in the K-12 system as well as those recently entering and graduating from college. Other efforts concentrate on current medical school students, encouraging behavior and knowledge that are responsive to the needs of underserved communities. These efforts call for education in cultural competencies (Beach et al., 2005), or support residency training in underserved locations (Jensen & DeWitt, 2008). Numerous institutions have sought to diversify their medical school faculties (Adanga, Avakame, Carthon, & Guevara, 2012), while loan forgiveness programs target graduates who are interested in practicing in underserved areas (Pathman, Morgan, Konrad, & Goldberg, 2012).

While preparation and enrichment programs can vary by institution, they generally share several characteristics, including classroom training in the sciences, instruction in writing, an awareness of cultural variances, and an emphasis on verbal reasoning and test-taking skills (Cantor, Bergeisen, & Baker, 1998). These programs commonly occur during the summer to provide intensive training that increases the probability of medical school acceptance. Other programs embody the element of community medicine, which spotlights the crucial role of understanding local culture when providing healthcare to underserved communities. These models introduce the community context into professional practice.

In addition to these characteristics, efforts specifically designed to increase the number of rural physicians generally feature the selection of participants with rural backgrounds, a focus on developing wide-ranging expertise, and a strong institutional mission related to community engagement (Rabinowitz & Paynter, 2000). By selecting students from

areas with a recognized doctor shortage, administrators intend to bolster the chances that these individuals will return to their home communities for practice. Students are also trained in family medicine or general practice fields, which increases their ability to address a wide range of healthcare demands. These components seek to counteract what has been labeled an "urban undertow," or the tendency of human, financial, and other resources intended for rural areas to be drawn to more populated communities (Wheat, 1994).

Research has suggested positive educational outcomes for rural and/or minority youth are in part dependent on a supportive family, peer, and community network (Farmer et al., 2006). As Farmer and his colleagues observed, "Growth and development in rural communities is inextricably intertwined with the education of children" (p. 10). For students from rural communities, the cultural capital gained through being part of a supportive and engaged community provides a crucial foundation for future success. Such a foundation may also serve to offer a sense of connection to the community and prevent educated professionals from permanently leaving rural areas. When rural students leave their communities to attend college, they are unlikely to return. Indeed, 15% of rural residents over 25 years of age hold a college degree, compared to 27% of those over 25 in urban areas (Kellogg Foundation, 2006).

Program Background

This article focuses on one institutional effort to offset the urban undertow and increase the number of minority physicians practicing in underserved, rural communities. The Rural Minority Scholars Program was introduced in 2001 as part of the University of Alabama (UA) Rural Health Leaders Pipeline initiative supported by the College of Medicine and the College of Community Health Sciences. The Pipeline is intended to increase the number of youth from rural areas who are interested in the health professions and pursue a medical degree. At the initiative's founding, less than 10% of matriculating students at the UA School of Medicine were from rural communities (Wheat, Brandon, Leeper, Jackson, & Boulware, 2007). Through a network of targeted efforts, the Pipeline offers programs that introduce rural, minority elementary students to health professions; encourage high school juniors from rural communities to investigate careers in the medical field; and allow medical school students to complete their residencies in rural areas.

While all counties in Alabama have some rural areas, 63% of the counties are defined by the Alabama Rural Health Association (ARHA, 2003) as "heavily rural." ARHA criteria include employment rates and locations, the extent of agricultural production, and the population per square mile. Twenty-three of these counties are also designated by the federal government as health professional shortage areas (Association of American Medical Colleges, 2009), indicating that the number of physicians is not sufficient to serve the population. The Rural Minority Scholars Program exclusively draws participants from these counties and is financially supported by the UA School of Medicine, the UA College of Community Health Sciences, the Alabama State Legislature, and numerous private organizations (e.g., the Rural Alabama Health Alliance, the Medical Association of the State of Alabama, and the Alabama Farm Federation).

With the introduction of the Minority Scholars Program, administrators specifically sought to increase the number of minority, underrepresented students pursuing a career in rural healthcare. New participants are recruited through high school visits, referrals from high school counselors, and recommendations from previous participants. Program administrators travel to high schools within the targeted area to share information about all components of the pipeline. Students attend the Rural Minority Scholars program during the summer between high school graduation and their first semester of college. From 2001 to 2009, 88 students participated in the five-week summer program. Eight former participants continued to medical school, one participant completed dental school, and several others pursued other advanced degrees in the health professions. Four of the medical school graduates completed family practice residencies, a specialty considered crucial to rural medicine, and are practicing in rural communities. (At the time of data collection, approximately half the students had not yet completed their undergraduate degree.) Although the curriculum has varied over time, in part due to unstable funding and institutional resources, participants have completed an introductory course in either biology or chemistry along with an associated laboratory experience. This course may be applied toward transfer credit at the student's undergraduate institution. In addition to the academic coursework, participants engage in a health issues seminar, which emphasizes the unique healthcare needs of rural communities. Participants also complete a college skills course to learn strategies for a successful undergraduate experience.

To supplement field trips to regional medical schools, the curriculum features a shadowing element, where participants observe the work environment of a minority physician. Some participants continue their shadowing work with a local doctor after the program's conclusion. These curricular components are enhanced through social interactions with peers. During the program, students live in on-campus residences, share meals, go to the movies, and meet participants in other components of the Pipeline. All the participants identify as underrepresented minorities from rural areas of the state.

Methods

Data were collected as part of a formative evaluation of the Rural Minority Scholars Program (Patton, 1990). Patton noted, "Formative evaluation serves the purpose of improving a specific program, policy, group of staff, or product … to improve human intervention within a specific set of activities" (p. 156). These efforts generally rely on qualitative data collected through interviews, observation, document analysis, and other methods. The purpose of the evaluation was to understand 1) the overall perception of the program by participants, 2) an assessment of particular program components, and 3) the impact of the program on academic skills and professional aspirations.

Four graduate students from the UA College of Education were involved in the evaluation as part of a mentored research course and assisted with the research design as well as data collection. Although researchers utilized the same interview protocol, the interviews were conducted by different members of the research team. A weekly research team meeting offered the opportunity to identify emergent themes as well as modifications to the interview protocol. Approval from the university's Institutional Review Board was attained before the beginning of the study.

Multiple sources of data were collected for the evaluation. Individual interviews were conducted with former program participants as well as program faculty and administrators. Twelve individual, semi-structured interviews were carried out with students who had participated in the program. No student declined an interview request. We were provided with a list of program participants, although current contact information was available for approximately 75% of them. We began by contacting those participants who had completed the program and gone on to medical school. These individuals were identified by the program administrators. We followed by snowball sampling as well as focusing on those individuals who lived in proximity to the institution and could be contacted for a face-to-face interview. All interviews were conducted in person; with the student's consent, the interviews were audiotaped and later transcribed. Participants represented multiple years of the program: 2002 (1), 2003 (2), 2004 (2), 2005 (3), 2007 (2), and 2009 (2). Eight of the student participants were female, which was a slight overrepresentation of all the program's participants. The interview protocol focused on student background, program experiences, undergraduate enrollment, professional aspirations, and community awareness. The student interview protocol is included as an appendix.

In addition, four individual interviews were conducted with program faculty members and administrators for a total of 16 interviews. We specifically sought to interview the program's director (a White male) as well as those individuals who had worked with the program for an extended period of time. Additional administrator participants included the program manager (a Black female), the institution's study skills coordinator (a White male), and a long-time CCHS professor (a White male). These interviews were conducted by various members of the research team and were audiotaped for later transcription. Faculty members and administrators offered insight into the curriculum design, program intent, and program outcomes. The administrator interviews provided a supplement to the data collected through student interviews. No faculty or administrator declined to participate in the interview. The study participants are identified by pseudonyms throughout this article.

Additional data sources consisted of a limited observation of the program during the summer of 2009. The primary researcher observed meetings of the health issues seminar course, and talked informally with students as well as administrators. In addition, program documents were collected and analyzed to further enhance the analysis. These documents included program evaluation, curriculum design, recruitment materials, grant applications, and program newsletters. Collectively, the data offered insight into how the program modeled community engagement and service to minority students interested in the medical profession.

Analysis began early during data collection. Patton (1990) concluded, "The overlapping of data collection and analysis improves both the quality of the data collected and the quality of the analysis" (p. 144). The constant comparative method (Glaser, 1978) encouraged consideration of "alternative explanations and contrary patterns" (Patton, p. 144). This method also reinforces the importance of emerging themes and allows for large amounts of data to be understood through flexible units of analysis. As outlined by Glaser, the analytic steps inherent to the constant comparative method include beginning data collection; finding key issues, activities, events, or stories in the data that emerge as significant categories; collecting data that focus on these emerging categories; outlining these categories while searching for additional data that either strengthens or negates the findings; searching for emergent relationships across the categories; and sampling, coding, and writing with these core categories. During data analysis, particular attention was given to the purpose and research questions associated with the study, including community engagement and awareness.

Trustworthiness of the data was enhanced through the collaborative efforts of the research team related to emerging themes as well as the triangulation of the multiple data sources. Summary points and key issues were also discussed with the participants, including students, faculty, and administrators. In regard to limitations of the study,

not all program participants were interviewed. For some students who were interviewed, their participation was several years in the past, which may have impacted their recollections and impressions of the program.

Findings

The study's findings suggest the importance of multiple curricular components related to student perceptions of service and engagement in rural, underserved areas. In particular, the notion of community was highly valued by participants and administrators. Community, however, was defined on numerous, overlapping levels. Not only were the participants' home communities recognized as an influential component of student development, but the program also sought to define the university campus as a community belonging to the students. In addition, when possible, administrators involved the professional community in program activities. Beyond acknowledging the rural backgrounds of students, the program also sought to foster a sense of community among the participants. Such efforts resulted in a supportive peer group, which provided encouragement and friendship as students began their postsecondary career.

A Recognition of the Needs of Rural Communities

First, the program explicitly acknowledged the needs of rural communities and promoted these needs as part of the student experience. This unique emphasis prompted numerous participants to visualize their futures as a leaders and professionals in underserved areas. Cecil, a participant who attended a Historically Black College and recently graduated from dental school, explained, "You can live a good life in a rural city and be a leader in that community, help a lot of people out." Cecil recognized the need for professional services in underserved areas of the state. His mother works as the education superintendent for his home county, while his father recently retired from a career at the local paper mill. For Cecil and his peers, the program articulated their experiences as a resident of a rural area, particularly the lack of access to reliable healthcare. "A lot of people really need help," Cecil concluded.

The effect was twofold: an acknowledgment of the relatively sparse resources directed towards communities most in need as well as the realization that the students were well positioned to serve those communities throughout their professional careers. An aspiring pediatrician, Jennifer, added, "It will be nice to be able to go back and help [my hometown] because there is not a pediatrician there. So I would be able to add a new aspect to [the town] and get more things happening there." Jennifer, an African-American woman, also recognized the need to be close to her family. She explained, "My parents, my grandparents…. It's just like when you go back home, you know there will always be someone there that you can depend on."

The curriculum highlighted the disparities in access and care faced by rural residents of the state. As Bernice, who is currently in her sophomore year at a Historically Black College, explained, "We reviewed statistics [for the state], and there's a whole county that has one pediatrician. Every child in the county has to go see the one pediatrician, and it's not possible for that one person to help the whole county." Bernice reflected on her desire to fill this need, adding, "I love listening to people, and seeing how they feel." Disparities in healthcare access are often embedded in racial differences. Throughout the history of the program, almost all of the participants have identified as Black or African-American. While some students described their home communities as relatively diverse, others noted an almost exclusively minority population. Deborah, a former program participant, counselor, and current medical school student, said, "We learned a lot about health disparities. I think for me that may have been what sold it for me. We talked about things that disproportionately affect Black people. I felt like that was the place I could make a difference."

The curriculum design recognized the value of students' individual backgrounds. The health issues seminar, for example, provided an important setting for students to discuss community health issues with practitioners, faculty members, and researchers. As one program administrator explained, "[The participants] know about cancer. They know about hypertension. But unless it is in their family, they have no concept of how it is in their community and throughout the state." Several students shared how their personal or family conditions had sparked their initial interest in medicine. Annie, who is currently working on her undergraduate degree, explained how her childhood challenge with a chronic gastrointestinal disease resulted in long car trips to the nearest medical facility. She said, "The travel to [the nearest large city] was the hardest part…. I would get dehydrated, and my mom and grandma would have to take me to the emergency room. [Every one of those] miles were agony." Realizing that others in her community with medical challenges faced a similar lack of access to convenient care, she concluded, "I started thinking one day maybe I could do this myself and maybe save a child the agony I went through."

The Importance of Networking Between Peers and Rural Professionals

Second, the program promoted networking among peers and rural professionals. In this way, a partnership existed between the university, the profession, and the community, encouraging students to interact with physicians and other

healthcare leaders who served in rural areas. Jennifer explained, "[Meeting rural professionals] changed the way I looked at small towns." Annie reflected on what she learned from these interactions, noting, "Rural doctors know their patients…. I mean, their entire family. You have to be comfortable with people, and able to sit down and talk with them." Annie's perception of listening and engaging with patients as an important professional skill was reinforced by her childhood interactions with doctors. "[The doctor] always made me feel so much better. He was open and friendly," she concluded.

Not only did participants experience seminars led by rural health professionals, they also spent time shadowing rural doctors who worked near their communities. Other groups visited rural hospitals. These structured experiences ensured that students left the program with a realistic understanding of the daily challenges faced by physicians. Daisha, who is completing her undergraduate degree, noted, "It opened my eyes to how important it is to work in rural areas…. [Communities] need that help from people who come from that area who understand, who live the same type of lifestyle." Daisha graduated from a school with less than 300 students. "I felt stuck there when I was growing up," she added, "[but] now I can see the importance of going back."

The curriculum emphasized a shared geographical and racial background among participants, speakers, and medical professionals. Lanice, who is preparing to attend graduate school to study physical therapy, recalled her shadowing experience with an African-American community doctor: "It was very, very important, because in [my hometown] we didn't have any Black physicians…. There wasn't another face that looked like mine." Several participants explained the positive influence of interacting with other minority peers from rural areas of the state. "I had been in the same class since kindergarten," Bernice noted. "It seems like a lot [of my high school classmates] just went astray…. It was good to see other people like me who wanted to do something I wanted to do, and we were all smart and all had the same motives." She concluded, "It seemed like [my high school peers] were selling themselves short in comparison."

By meeting other students with a shared background and an interest in medicine, participants felt empowered to engage in a program of study that would lead to medical school. The curriculum celebrated multiple definitions of community. Not only did faculty and administrators emphasize the unique needs of rural towns, but they also fostered a sense of belonging among the participants. This sense of camaraderie provided a positive influence on academic abilities and confidence. Living in the campus residence hall and attending classes together, Bernice recalled, "The professor taught you like you should already know this information. But everybody would come back to the dorm and figure it out…. I remember those nights trying to figure out a problem. I'd fall asleep and wake up, and they would still be working on it." Walker, who is entering his sophomore year at a Historically Black College, shared how the program participants were excited to enroll in a "real" college biology class. "There were plenty of other students in there, probably about 60 people, but [the participants] all walked in together and sat together…. Our instructor mentioned that most of us consistently made some of the best grades in class," he added. Several students contrasted their time in the program with their high school experience, where they often felt isolated among peers who did not share the same academic or professional aspirations.

A Focus on the Steps to Medical School

Third, the program instilled knowledge related to undergraduate education, a pre-med curriculum, and application to medical school. Participants expressed mixed emotions on how well their high school curriculum had prepared them for the realities of undergraduate education. Now an undergraduate science major, Daisha reflected on her experiences in the program. "I think one of the biggest barriers [for rural minority students] is academic preparation in high school, and that is no fault of their own…. The program opened my eyes a lot." She added, "I think coming from rural areas you have facilities sometimes and exposures that are limited. The first time I used a Bunsen burner was in [this program]. I talked to other students who had similar experiences. Imagine going into a college lab and not knowing the basic things." Administrators also noted that, although the program recruited some of the top minority students from across the state, participants still had to learn important academic skills required to succeed in college. As one administrator explained, "They have been bright students in their communities. But coming to this environment, you can't just memorize the night before. You have to actually study."

Students reported that their community contacts with medical professionals before entering the program were limited. Such limitations often resulted in the perception of medicine as an unattainable career goal. For students who were the first in their families to go to college, perceived obstacles existed in terms of conceptualizing an academic path beyond the four years of undergraduate study. Reflecting on her work as a program counselor, Deborah explained, "I think one of the big problems I have noticed with rural students and with minority students is that sometimes we wait to decide that medicine is our goal, and so I think what [the program] did is helped them put it in their sight early on…. I really think that it helped them set out a roadmap of where they were at that point to where they want to be." By instilling the expectations

and knowledge expected of successful medical school applicants, the program worked to overcome the perception of medicine as an illusive ambition. Leslie, who is currently working on her undergraduate degree, explained, "I don't have any doctors in my family, and I didn't personally know any doctors. [Before this program] medicine to me was just something that was like—people can do it, but I don't know that I could." Noting the future benefits of her academic degrees on her community, Deborah concluded, "[Having more professionals in rural areas] just takes more people like me, talking to the community, explaining I grew up in the same place and sat in the same [high school classes]."

The program sought a balance between recognizing the limited resources that rural communities often confront and celebrating the values instilled by rural networks. One administrator explained, "We don't try to teach rural. These kids know rural. They are rural…. We just try to understand their ruralness as best we can and praise them for it." Faculty and administrators recognized the significance of students' background in terms of completing a degree and returning to their home communities. "[Their rural values] will be what takes them back home again. We don't want to act like it is not important because that is the one thing that will take them home again as physicians," the administrator concluded. Deborah, a former participant who also served as a program counselor, reflected on the students' interpretation of this focus: "They all knew [the program] had their academic interests at heart. They all knew that [the program] wanted them to go back to rural Alabama as physicians."

Implications

The program evaluation discussed in this article offers lessons for other educators interested in working with underrepresented student populations or targeting specific community needs. Such models move beyond a university-sponsored program or an effort operated by a small group of faculty members and administrators. Rather, as illustrated through the data featured here, successful efforts recognize the value inherent in community resources and student experiences, and seek to engage multiple facets of the community in terms of student development. I consider six implications for practice in terms of this research.

Interactions with Professionals

A common refrain from participants in the Rural Minority Scholars Program was the positive influence of networking with rural professionals. Although the students grew up in rural areas, they frequently noted that they had never met a minority doctor or healthcare professional. Not only did the program facilitate shadowing experiences, where students could observe the daily practices inherent in professional life, but the curriculum also encouraged students to discuss the realities of healthcare access with minority doctors. These experiences encouraged personal connections between students and rural professionals. In addition, students reported that, by better understanding the realities of professional life for rural physicians, they could more clearly visualize themselves in a similar role.

Recruiting Students with a Shared Background

Participants in the Rural Minority Scholars Program reported immense benefits gained from peer interaction. Engaging in the curriculum with like-minded peers provided positive reinforcement of the students' aspirations, expectations, and values. This importance went beyond a shared ethnic background or identifying with a rural community. Rather, students formed a unique bond with peers who shared similar aspirations towards a career in medicine. The program recruited students who demonstrated particular characteristics, including residency in a rural area, an underrepresented minority background, a high-achieving academic record, and interest in a medical career. These multiple characteristics proved fruitful in developing a supportive, engaged peer community.

Recruiting Students from Rural Areas

A hallmark of programs that seek to increase the number of physicians practicing in underserved areas is recruiting participants from those same areas (Rabinowitz & Paynter, 2000). Because all the students in the Rural Minority Scholars Program resided in rural towns across the state, the curriculum emphasized the unique needs of communities in those areas. Students expressed a sense of empathy with rural communities and noted that their families and friends would be those who could benefit by their future career as a physician. Rather than attempting to teach students the significance of returning to underserved areas, the curriculum built upon personal, social, and emotional connections the students already possessed.

Constructing a Cohort Model

Although the program recruited only a small number of participants each year, the academic coursework and social interactions were highly structured around a cohort model. The benefits of a cohort structure, or a curriculum structured around shared learning experiences (Scribner & Donaldson, 2001), included peer reinforcement and accountability. Students lived in the same residence hall, shared meals, participated in field trips, and walked to class as a group. In addition, the participants in the Rural Minority Scholars Program noted that the cohort structure facilitated

a sense of community among the group. Rather than feeling overwhelmed by the university campus, or isolated by their experiences in a metropolitan city, the students emphasized the sense of camaraderie and fellowship that existed between their peers. This camaraderie persisted beyond the summer curriculum. Numerous participants recounted how they kept in touch with their friends and held each other accountable in terms of academic achievement and professional aspirations.

Travel to Rural Areas

While program administrators acknowledged that students brought into the program a unique personal knowledge of rural communities and the challenges these areas faced, participants noted that their interaction with medical professionals in their communities was highly limited, particularly in terms of physicians of color. By traveling to various rural areas of the state, the curriculum enabled students to see firsthand the needs of underserved communities. Students also expressed a better understanding of the daily demands associated with medicine. Beyond interacting with physicians in a professional environment, these site visits gave students insight into the complexities of medical administration and practice.

The Influence of Community

A common refrain throughout the program evaluation was the influence of community on student success. Since the program's goal was to increase the number of minority physicians working in underserved, rural communities across the state, this influence was centered away from the university campus. In addition to academic preparation, students learned the realities of life for rural residents, and spent time traveling to underserved areas. Beyond this emphasis, however, a sense of community was fostered through professional engagement, campus interactions, and peer networks. An implicit message was offered to participants—working in underserved communities was a worthwhile commitment, and numerous individuals were invested in the students' success.

Conclusions

The analysis presented in this article underscores the potential for community engagement to provide beneficial outcomes across multiple populations. Future research in this area might consider the experiences of rural minority students in other disciplinary pipeline programs as well as those at diverse institution types. As underrepresented minority students, the participants in this study faced challenges that rural students from other ethnic backgrounds may not encounter. The student experience after college enrollment also remains a crucial influence on future professional aspirations, and should be further examined. Specifically, how does the college student experience reinforce or detract from the skills promoted by such initiatives as the Rural Minority Scholars Program? The findings presented here, as well as those from Farmer et al. (2006) and others who have considered community involvement in rural education, raise significant questions about the role of cultural capital and educational privilege. While some of the students in this study reported that family and peers encouraged their educational aspirations, others did not. Additional research should consider the potential negative influences that a student's family, peer group, and community might have on the educational trajectory.

While the curriculum targeted the individual student in terms of understanding and preparing for the often challenging task of successfully achieving admission to medical school, the local and professional communities were highly invested in the student's success. The local communities served as a rich resource for the program. Not only did local counselors and professionals help to identify potential participants, but the students drew upon their connections to rural communities in terms of future aspirations. The program also benefited from the involvement of medical professionals. Students profited from connections made with practicing physicians, which enhanced their understanding of the needs and demands of working in underserved areas. By defining awareness and scholarship through the identification of a community need and engaging with local resources to meet that need, the program provided benefits to these multiple participants and engaged the university in a pressing social demand.

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Appendix

Student Interview Protocol

Background

Gender
Race/ethnicity
Family educational background
Hometown, high school
Undergraduate institution
Year participated in program
College major
Year of college graduation (if applicable)
Year of enrollment in medical or professional school (if applicable)
Current employment (if applicable)

Protocol

1. Tell me about your interest in medicine.
2. How did you find out about the program?
3. How did you make the decision to go to college?
4. Where did you decide to go to college? Why?
5. Who did you talk to about your decision to go to college? To attend this program? To pursue a medical career?
6. What role did your family take in this decision-making process?
7. How much do you feel you know about medical school or the medical profession? How did this program help you with that knowledge? How much knowledge did you gain as an undergraduate student?
8. Tell me a little about your peers from high school.
9. What influence did your peers and other members of the community have on your decision to pursue a career in medicine?
10. What role did mentors or advisors have in your decision to pursue a career in medicine?
11. Did your participation in the program provide access to new mentors or advisors?
12. What was your undergraduate major? Why did you select this field?
13. Tell me a little about your high school curriculum. Did you take classes in math and science? What were they like?
14. Compare those classes with the ones you took as a member of this program. What were the major differences?
15. How did this program impact your expectations for college?