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Abstract

Purpose: To examine trends in the psychologist workforce and training opportunities, including factors that may influence the decision of clinical psychologists to practice in rural settings.

Methods: We use a mixed-methods approach to examine the psychologist workforce nationally and in North Carolina (NC), including (1) an analysis of the location of programs awarding doctoral degrees; (2) an analysis of the practice, demographic, and educational characteristics of the psychologist workforce; and (3) interviews with directors of doctoral programs in clinical psychology to understand where current graduates are getting jobs and why they may or may not be choosing to practice in rural communities.

Findings: Fewer than 1% of programs and institutions awarding doctoral degrees in psychology in the United States are located in rural areas. In NC, approximately 80% of practicing psychologists have out-of-state degrees and about 80% of recent NC graduates are not currently licensed in the state. This juxtaposition undermines the utility of adding more in-state degree programs. While expansion of training programs within rural areas could help alleviate the shortages of mental health providers, adding new degree-granting programs alone will not necessarily increase supply. We discuss complementary recruitment and retention strategies, including greater incentives for rural training and practice as well as training in emerging technologies that don't require providers to be physically located in underserved areas, such as telemedicine.

Conclusions: Increasing the supply of psychologists practicing in rural areas will require a thoughtful, multipronged approach to training this critical part of the behavioral health workforce.

Key words health care workforce, psychologists, rural mental health.

The United States is experiencing a critical shortage of mental health and substance abuse providers, a trend that has been going on for decades.[1-4] Estimates from 2017 indicate that the current mental health workforce is only meeting 32.5% of the estimated demand for behavioral health services.[5] Rural areas, in particular, have a substantially higher rate of unmet needs for mental health professionals, with an estimated 62% of mental health professional shortage areas located in rural or partially rural areas.[5] Estimated professional shortages exist across all behavioral health provider types, but they are particularly acute in psychology, with over 46,000 psychologists needed to meet current demand.[6]

Psychologists' unique knowledge and skills make them a critical part of the mental health workforce. In this report, we focus on psychologists who have completed doctoral-level education, typically receiving either a Doctor of Philosophy (PhD) or a Doctor of Psychology (PsyD) degree. These individuals may be licensed to provide clinical care, they may specialize in research, or they may participate in a growing number of other areas, including business and organizational psychology or computational psychology. Doctoral-level clinical psychologists have an extensive understanding of psychopathology and psychosocial interventions. Most are not authorized to prescribe medications, although 5 states currently grant prescribing privileges to trained psychologists.[7]

Clinical psychologists' knowledge and skills make them well suited to fill regional shortages of nonprescribing mental health professionals, who as a group are poorly distributed across the United States. In 2013, approximately 153,000 psychologists actively practiced in the United States, an increase of only 3.2% since 2005.[8] Combined with a 7% increase in the overall US population during the same period, this resulted in a declining ratio of active psychologists per population. Like other mental health professionals, psychologists disproportionately practice in urban areas.[4,9-11]

Little is known about how psychologists choose between urban and rural practice locations, but insights can be gleaned from literature on practitioners in other fields. The rural background of medical and social work professionals is an important predictor of rural practice upon graduation.[12,13] "Rural upbringing," defined as spending all of one's childhood in a rural location, living for more than 10 years in a rural location, or calling a rural place one's childhood home, is one of the most influential factors in physicians' rural practice choice.[14] Graduates with high debt (>$75,000) have been shown to be less likely to practice in rural areas.[15] A variety of alternatives have been suggested to encourage the decision to practice in rural areas, including increasing exposure to rural populations through training opportunities in rural areas and the provision of direct incentives through loan repayment programs.[16,17]

In this manuscript, we report the findings of a mixed-methods study to (1) describe the workforce of psychologists and their training options, (2) examine the proportion of psychologists who locate in rural areas, and (3) describe the options available to states to increase the supply of rural psychologists with an aim toward reducing mental health professional shortages. Our work was conducted in North Carolina, but lessons can be drawn for other states with rural mental health shortage areas.

Methods

We used a multipronged approach to examine the psychologist workforce nationally and in North Carolina, including (1) an analysis of the location of programs awarding doctoral degrees in psychology; (2) an analysis of the practice, demographic, and educational characteristics of the psychologist workforce in NC using licensure data from the North Carolina Health Professions Data System (NC HPDS); and (3) interviews with directors of doctoral programs in clinical psychology (PhD and/or PsyD) both at NC universities and in other states to understand where current graduates are getting jobs and why they may or may not be choosing to practice in rural communities. To the extent possible, we focused our analyses on psychologists engaged in clinical practice and on issues that facilitate clinical practice in rural areas.

Location of Training Programs and Providers

To examine whether the location of training programs is associated with practice location decisions, we obtained data on the location and rural status of doctoral programs in psychology from the 2014 Integrated Postsecondary Education Data System (IPEDS), a set of surveys collected by the National Center for Educational Statistics that describe US postsecondary institutions.[18] Rural status was assigned to each institution based on the county in which each doctoral program was located. For this report, we collapsed 12 New Urban Centric Locale Type categories coded by IPEDS into 4 location categories: *City* (inside an urbanized area[i] and a principal city); *Suburban* (inside an urbanized area but outside a principal city); *Town* (inside an urbanized cluster but outside an urbanized area); or *Rural* (outside both an urbanized area and an urbanized cluster).

We also obtained data from the North Carolina Health Professions Data System (NC HPDS) on licensed doctoral-level psychologists who actively practice in North Carolina. These data include the training program

Table 1 Interview Questions

1. Does your program offer clinical PhD/PsyDs?
2. If so, how many students are now in residence?
3. About how many clinical graduates have you had over the past 5 years?
4. How many of these clinical graduates came from rural areas?
5. How many of these clinical graduates were interested in returning to rural areas to practice?
6. How many of these clinical graduates actually did so?
7. Are there any job opportunities for clinical psychologists in rural areas?
8. What types of jobs are available in rural areas with what types of employers?
9. What factors influence a clinical graduate's decision to practice in a rural versus urban area? (Prompt: How important are internships in rural areas—do you think they lead to more clinical graduates in rural practice?)
10. Any other observations about psychologists practicing in rural areas?

completed, demographic information, and practice information on individuals currently licensed, regardless of the location of their training. We integrated data on licensed psychologists from the HPDS with 2006 data on North Carolina counties' need for and shortage of mental health professionals.[9] We used IPEDS and HPDS data to generate maps depicting the location and rural status of training programs nationwide and the distribution of programs in North Carolina in relation to county-level need for mental health professionals.

To determine where graduates of North Carolina psychology programs practice, we merged data on psychologists trained in NC programs between 2009 and 2013 with NC licensure data from 2014 in order to calculate the percentage of NC graduates who have stayed in NC and have become licensed in the state.

Interviews with Psychology Doctoral Program Directors

Finally, to provide greater context for the potential expansions in doctoral training programs described above, we conducted a total of 15 interviews with PhD training program directors, including those in NC (n = 7) as well as those with either PhD or PsyD training programs with a focus on training for rural practice in other states (n = 8). The interviews used a guided discussion (see Table 1) to elicit information about the differences between PhD and PsyD trainees and training experiences, recruitment of students from rural areas, training opportunities for clinical practice in rural areas, assessments of the workforce opportunities in rural areas, and the infrastructure required for effective clinical psychology training programs. Two study team members identified themes from the notes using an open-coding approach; codes were refined via an iterative process. Discrepancies were reconciled through team discussion. To validate qualitative findings, the team reviewed findings and their implications with community stakeholders in NC and incorporated their feedback.[19]

Results

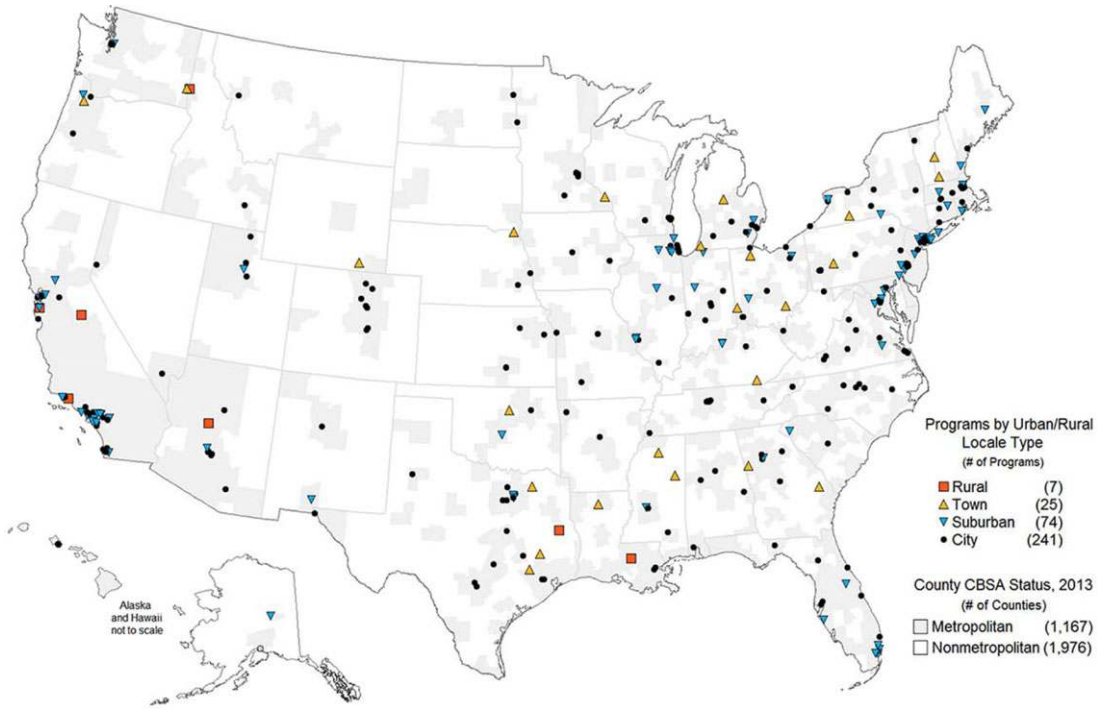
Location of Training Programs

In 2014, doctoral degrees in psychology were awarded by 707 university programs in 338 institutions across the United States, indicating that many institutions offered doctoral-level psychology degrees from multiple departments (usually either psychology or education). Only 7 programs in 6 institutions[ii] (1% of programs and 1.8% of institutions) were coded as being located in rural areas (Figure 1). In North Carolina in 2014, there were 7 degree programs offered by 6 institutions (Figure 2). None are located in rural areas.

We identified 2,138 licensed psychologists with doctoral degrees who were actively practicing in North Carolina in 2014. Of these, the majority were female (61%) and white (87.1%), while 6.3% identified as black and less than 0.1% as Hispanic. The vast majority (82%) of the state's licensed doctoral psychologists were trained out of state. We also found that 80% of in-state graduates were not licensed in NC. Just over 10% of NC licensed psychologists were practicing in rural counties, in contrast with the 31% of the NC population that lives in nonmetropolitan areas.[20]

Figure 2 overlays 3 data elements: (1) the geographic distribution of the 6 institutions in North Carolina granting doctoral degrees in psychology; (2) among NC-licensed psychologists who were actively practicing in 2014 (N = 385), the percentage who trained at each institution; and (3) the estimated unmet need for mental health professionals in each of North Carolina's 100 counties.[9] The map shows that most of North Carolina's psychology trainees received their training in urban areas where most of the need for mental health professionals is already being met. None of the 6 institutions granting doctoral degrees in psychology in North Carolina were located in rural areas. However, every training program is within an hour's drive of a county with substantial unmet mental health needs (indicated by darker shading).

Figure 1 Map of US doctoral psychology programs, by rural versus urban location.



Sources: IPEDS, National Center for Education Statistics, 2015; US Census Bureau and Office of Management and Budget, 2013.
Note: New Urban-Centric Locale Types are created by the NCES and based on an address's proximity to an urbanized area. For definitions, see https://nces.ed.gov/ccd/rural_locales.asp. Core Based Statistical Areas are current as of the February 2013 update. Nonmetropolitan counties here include micropolitan counties and those outside of CBSAs.

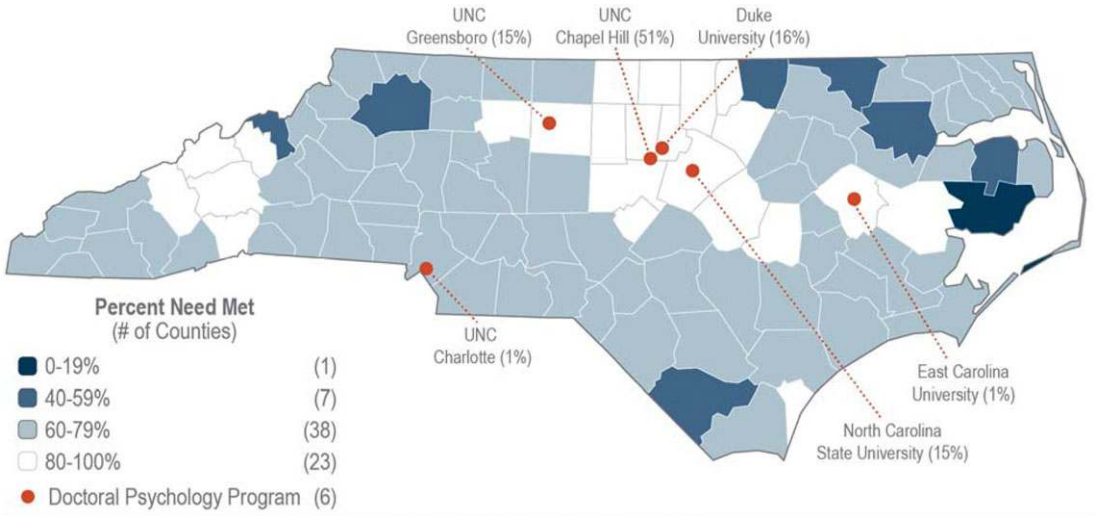
Program Director Interviews

Although interviewees offered a variety of opinions and experiences about doctoral training in psychology generally, and preparing psychologists for rural practice specifically, 5 main themes emerged from these discussions. First, there was a general recognition that there are extensive unmet needs for mental health services among people living in rural areas of North Carolina and other states. Further, although not specifically asked in interview questions (see Table 1) to evaluate the potential of rurally located doctoral programs, many program directors identified rural-focused clinical psychology training programs as one potential strategy to address unmet mental health needs in rural areas. Nonetheless, none of the doctoral-level degree programs in NC currently has a specialization in rural practice. The director of the PsyD program at Georgia Southern University offered an interesting comparator. GSU's program has a distinctive focus on rural and underserved populations. The majority of their students previously lived or worked in rural areas and an estimated 70% of graduates return to practice in rural catchment areas, although not always within the state of Georgia. Students have a required practicum in a rural setting and a dedicated class on rural mental health, and they are encouraged to do their internships in rural areas.

Second, most current clinical psychology programs recruit from a national pool of potential doctoral students and do not focus on recruiting and training those who will elect to stay in-state. As a result, most graduates leave North Carolina for other states. In addition, over 80% of those who are licensed in North Carolina were trained in other states. This is partially explained by the absence of incentives for NC programs to recruit and train in-state residents or for in-migrants to practice in rural areas of North Carolina.

Third, several training program directors pointed out that a complex infrastructure is required to both train and retain doctoral-level clinical practitioners to work in rural areas. They emphasized that increasing the number of practicing psychologists in rural areas would take much more than simply adding a new rural-focused degree program. Locating a doctoral program in a rural area would facilitate exposure to rural environments and lifestyles, but rural location alone would not make for a successful training program. Students need clinical supervision throughout their training, so a successful training

Figure 2 Geographic distribution of doctoral-level psychology training, in relation to the degree to which NC counties' need for mental health professionals is currently being met.



Source: Program on Mental Health and Substance Abuse Systems and Services Research, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

program must be affiliated with clinics and office practices in rural areas that already have licensed psychologists on staff who can provide the required supervision. These settings are few and far between, both in NC and elsewhere. In addition, prior to graduation, psychology doctoral students are required to participate in an internship, which is generally a yearlong experience in a clinical setting approved by the American Psychological Association. Nationally, few internships are located in rural areas, due to both the scarcity of licensed supervisors in clinical settings in those areas and the scarcity of funded internship positions. Internship stipends cost up to $30,000 per year and must be paid directly by the host organization. Further, the market for internship programs is managed through a national matching process, much like what occurs for medical residency. Many students trained at North Carolina universities may have internship offers from out of state; some of these offers may lead to postgraduate job placements outside North Carolina. In addition, several directors mentioned that educational loan forgiveness programs can be a big inducement to attract graduates to practice in rural and underserved areas.

Fourth, the subspecialization among doctoral-trained psychologists means that not all trained psychologists are available for clinical work. This is one limitation of the aggregate statistics on the psychology workforce in NC in that the numbers of licensed psychologists each year overestimate the actual numbers in clinical practice. For example, some of the clinical training programs specialize in health psychology, which usually requires a medical facility with a health promotion program, the sort of facility that serves a large population and thus is unlikely to be found in a rural area. Subspecialization further discounts the supply of psychologists available to serve rural and other underserved areas.

Finally, while program directors acknowledged a strong need to train psychologists for rural clinical practice, most noted the scarcity of clinical jobs in those areas. Community Mental Health Centers and VA clinics may be examples of current workplaces in some rural areas, but these facilities often have funding shortfalls that do not allow growth through hiring psychologists. Setting up private practice in rural areas is another employment option, but one that is continually fraught with economic challenges, given the well-known lack of insurance and resources for out-of-pocket payments among rural residents.

Discussion

Although it is not clear who bears the responsibility for reducing the number of mental health shortage areas through mental health workforce training, states with significant workforce shortages may consider increasing available training programs, We used a mixed-methods approach to examine how the psychology workforce in North Carolina and across the United States could be expanded to address the rural provider shortage, a compelling problem at the state and national levels. We found that very few programs and institutions awarding doctoral degrees in psychology are located in rural areas (less than 1% of programs). Although program

directors generally acknowledged that recruiting candidates for doctoral studies from rural areas was an excellent method of increasing the workforce practicing in rural areas, we did not find strong corroborating evidence that training programs located in rural areas of North Carolina could actually mitigate the provider shortage experienced by rural areas. This conclusion resulted from a number of factors, possibly most importantly from the national market for doctoral candidates in psychology. Employment opportunities are such that few licensed practitioners in North Carolina were actually trained by local universities and few trained in North Carolina remained in state. APA licensing standards also complicate the pipeline from training program to practicing provider, with postdoctoral training required of some specialties, and internships and supervised hours required of all trainees prior to licensure. These additional training requirements present opportunities to recruit and retain providers in North Carolina, but they are difficult to fulfill in rural settings and also offer opportunities for those trained in state to move elsewhere.

Several possible complements or alternatives to additional doctoral programs emerged in our study that could serve as national recommendations. First, successful recruitment of psychologists to practice in rural areas could focus on professionals who have trained in or lived in rural communities. This fits with findings from other health professions. For instance, physicians who are prepared to work and live in small-town areas stay longer in their rural practices, and rural residency rotations not only prepare physicians for rural practice but also increase the duration of rural practice.[21] For example, the University of California-Merced medical school trains physicians for rural practice by funding and recruiting 10 medical students from the UC Davis campus and giving them specialized training and support in their 2nd-3rd years to practice in rural areas with rural populations. This program works in collaboration with the UC Merced campus, which is located in a rural area. We were told that most of these students do stay and practice in rural areas of California. The UNC School of Nursing offers another model for educating graduates to meet the needs of underserved, rural and vulnerable populations across NC. The Psychiatric-Mental Health Nurse Practitioner (PMHNP) curriculum is specifically designed to educate and train PMHNPs recruited from rural areas through a combination of on-site and distance learning formats to: (a) meet the needs of underserved persons with severe and persistently mental illness in NC and (b) to provide integrated behavioral health care. Historically, over 70% of graduates are employed in rural, underserved or public health settings following graduation.[22] Incentives such as additional funding of training awards for students recruited from rural areas in North Carolina to existing programs could yield a greater number of clinical psychologists who practice in state after completing licensure requirements.

Second, expansion of PhD/PsyD supervised training opportunities such as internships in rural areas could lead to a larger number of students who seek and stay in such placements. Both PhD and PsyD programs that meet certification by the APA are able to produce graduates that can meet clinical needs in rural and other underserved areas. Clinical programs require a training infrastructure involving collaboration with extra-university partners. Access to clinics, hospitals, and practices that offer mental health services is needed so that students can be exposed to clinical work in rural environments. Further, to serve as training sites, these settings must have licensed psychologists and other qualified mental health professionals on staff to provide the necessary supervision for both beginning and advanced students. Few rural communities have such resources. A greater number of internships could be funded and established in rural areas of the country and greater incentives for rural providers to supervise the next generation of practitioners could be provided through state or national funding.

Finally, greater use of technologies such as telehealth approaches may further improve availability of mental health services in rural areas, although challenges in task sharing and funding remain.[23,24] While our study did not explicitly solicit information on training toward telehealth or other technology-assisted approaches, several of the program directors mentioned this as a promising direction for training to facilitate access to mental health services in rural areas. Existing training programs could provide opportunities for new clinical mental health providers to understand telehealth approaches and use them with underserved populations.

As these findings attest, training programs based at urban universities can be adapted to channel students to practicums and postgraduate practice that meet the mental health and primary care needs of people living in rural areas. Collaborative models between rural and urban universities might be optimal in realizing the advantages of both settings.

Endnote

i Urbanized Areas: 50,000 or more people with a core population density of at least 1,000 people per square mile and adjoining territory with at least 500 people per square mile. Urban Clusters: places with populations between 2,500 and 50,000 people (US Census Bureau, https://www.census.gov).

ii One of the "rural" programs is Palo Alto University, in Palo Alto, California, a location that is not typically considered rural.

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