ISSUE BRIEF

# Youth Mental Health in North Carolina:
## Creative Innovations in Challenging Times

*Kurt D. Michael*

**In this issue of the *North Carolina Medical Journal*, youth mental health is the focus. The second half of the title of this issue brief, "creative innovations in challenging times," was designed to convey a sense of optimism and urgency for the readers. The optimism centers on the joys of birth, the wonderments of childhood and adolescence, and the discoveries and connections between families and cultures among and within North Carolina communities. The sense of urgency pertains to the current epidemiologic realities for youth between the ages of 10 and 21 and the growing economic and health care disparities impacting the vast majority of North Carolinians. The author lineup for the issue is nothing short of exceptional and includes contributions from experts in epidemiology, suicide prevention, policy and law, school mental health, telemedicine, the impact of technology and social media on youth, innovations in the dissemination of psychological science to the public, attention-deficit hyperactivity disorders, diagnostic disparities, substance misuse and abuse, K-12 education, and systems of care for families. Serving as guest editor of this issue on youth mental health for the *North Carolina Medical Journal* has greatly expanded the breadth and depth of my understanding of the aforementioned issues relevant for today's youth. I hope that this issue is as informative to your work, regardless of your role in serving and advocating for young people in the great state of North Carolina.**

It has been well established that about half of all mental health conditions are diagnosable by the age of 14 and that approximately three-quarters emerge by the age of 24 [1]. Among the most common ailments to afflict youth during the formative years are depression, anxiety, attention deficit disorders, substance misuse, and suicidal thoughts [1]. Indeed, more than 1 in 5 teens will experience a first episode of major depression before the end of high school [2] and depression is ranked as one of the most burdensome and disabling health care issues, equal to cardiovascular and respiratory diseases, worldwide [3]. Unfortunately, mental health care systems are not typically oriented toward early detection and prevention of these conditions. The consequences of delayed detection and the lack of early intervention are sobering. The opioid epidemic and rising suicide rates have brought these consequences into sharp relief. According to the Centers for Disease Control and Prevention (CDC), as of 2017 the overall life expectancy in the United States had declined two of the previous three years after decades of steady increases; drug overdoses and suicides were identified as primary culprits [4]. Thus, programs to prevent premature death must be comprehensive and include a focus on the social, emotional, and behavioral determinants of health much earlier in the life cycle.

The problem of suicide presents a good illustration of how an effective model of prevention could be designed and implemented for youth in particular. According to national data from the 2017 Youth Risk Behavior Survey (YRBS), almost 32% of high school teens experienced "persistent feelings of sadness or hopelessness" and 17% reported having "serious suicidal thoughts" during the previous 12 months [5]. Though only a small percentage of teens reported making a suicide attempt requiring medical intervention during the previous year (2.4%) [5], undetected or untreated sadness, hopelessness, and suicidal thoughts can fester. Worse, when suicidal thoughts are experienced in a context where there is ready access to lethal means (eg, dangerous medications, firearms), it can be a deadly combination. Thus, identifying and treating the more prevalent correlates of suicidality at an earlier stage is a more sensible entry point for prevention efforts versus waiting until youth experience much more serious emotional and behavioral crises.

In rural Western North Carolina, a model of early detection and proactive intervention has been implemented, sustained, and evaluated in several rural K-12 districts. The Assessment, Support, and Counseling (ASC) Centers involve school mental health (SMH) partnerships developed between rural K-12 districts (Alleghany, Ashe, Watauga) and Appalachian State University (ASU) that serve 10-30% of enrolled students annually as a creative method of reducing access barriers (eg, availability, economic disparities, lack of transportation) to youth mental health services [6]. ASC Centers are staffed by licensed mental health professionals and graduate students under supervision by faculty from various human

Electronically published March 2, 2020.

Address correspondence to Kurt Michael, 222 Joyce Lawrence Lane, Boone, NC 28608 (michaelkd@appstate.edu).

**N C Med J. 2020;81(2):101-105.** 
0029-2559/2020/81204

service disciplines, including clinical psychology, social work, and marriage and family therapy. Thus, in addition to serving youth in the context where they spend the majority of their time (ie, schools), ASC Centers have a significant workforce development component as part of their mission.

Overall, ASC Centers were designed to reduce the burden of mental health impairments on students so that the educators are able to devote the majority of their energies to improving learning outcomes. Similar to the epidemiological trends described above, the most common referrals for ASC Center services are youth experiencing depression, anxiety, attention-deficit disorders, suicidality, and misuse of substances [7]. A typical course of treatment would include 10-14 sessions of individualized cognitive behavioral therapy (CBT) over about two to three months. ASC Center services have been shown to be effective for the majority of youth who undergo treatment [7-9]. Moreover, the ASC Center model has developed and implemented effective and sustainable practices to assess, treat, and manage youth who present with suicidal crises in the context of under-resourced rural school districts [10, 11]. Due in part to these empirical findings, a team including members of ASU psychology faculty, Ashe County Schools, and RTI International was awarded a 5-year, $2.5 million grant from the US Department of Education to scale up ASC Center services in rural North Carolina schools. Additionally, the grant will help to deepen preprofessional preparation of Appalachian doctoral students in clinical psychology in hopes of deploying them strategically into high-need K-12 schools after graduation. Preprofessional preparation will also include advanced, targeted coursework and practicum training in the provision and study of rural school mental health services.

In addition to SMH partnerships like the ASC Centers, there are many exemplary programs designed to serve youth aged 10-24 across North Carolina, several of which will be highlighted in this issue of the *North Carolina Medical Journal*. JP Jameson, associate professor of psychology at Appalachian State University, sets the tone for creative innovation in his piece titled "Responding to Adolescents at Risk of Suicide: Implications of the Ideation-to-Action Framework" [12]. Jameson takes us on a deeper dive into some of the more vexing issues facing suicidologists today, especially the difficulties in predicting who is likely to attempt suicide. Jameson aptly points out that empirical studies have documented a list of factors that are often correlated with suicidal *thoughts* (eg, current mental illness), yet he laments that much less is known about what predicts attempt *behavior*. Jameson further argues that the progression from suicidal thinking to an attempt ("ideation to action") is not only unpredictable, but that it often escalates in less than 10 minutes for nearly half of those who have made serious attempts [12, 13]. The means reduction approach described by Jameson, Counseling on Access to Lethal Means (CALM), is a public health approach to suicide prevention. CALM is focused on preventing suicide death by proactively reducing access to the most lethal means available to patients, regardless of their level of imminent risk at any given moment. In other words, CALM promotes environmental safety in much the same way as pediatricians recommend that new parents use child safety locks on doors and cabinets and tamper resistant medicine caps.

In a timely sidebar to Jameson's commentary, General Assembly Attorney Jason Moran-Bates reviews the youth suicide legislation before the 2019 North Carolina General Assembly [14]. Moran-Bates provides an expert summary of legislation introduced to address both suicide prevention in particular and school safety overall in North Carolina. Moran-Bates discusses the creation of the House Select Committee on School Safety, which took place in February of 2018 and ultimately made two recommendations: that a study be conducted regarding the development of a statewide mental health screening process, and to expand the school safety grant mechanism during the 2019-2020 fiscal year [14]. These recommendations were subsequently introduced during the 2019 General Assembly session as part of House Bill (HB) 75 and 74, respectively.

The next invited commentary, "Mental Health Services in North Carolina's Public Schools," by Brandon Schultz, associate professor of psychology at East Carolina University, and colleagues, offers readers a glimpse of some of the most concerning problems facing today's youth, including increased suicide rates and the limited availability of effective treatment services [15]. Schultz and colleagues then provide an excellent summary of how existing infrastructures in North Carolina schools provide the necessary framework to help sustain and grow efforts to improve youth mental health. Ultimately, Schultz and colleagues conclude that the most sensible path forward when scaling up youth mental programming in K-12 schools is to braid innovative approaches with existing systems to secure ongoing funding and to maximize the sustainability of vital SMH services for North Carolina youth [15].

In the sidebar that follows, "Addressing Students' Mental Health Needs via Telehealth," Steve North, founder and medical director of the Center for Rural Health Innovation, describes how telehealth is a feasible and effective method of increasing access to behavioral health care for North Carolina youth, especially those who live in rural communities [16]. A longtime champion of the benefits of telemedicine, North has promoted the merger of these technologies into school health centers to provide improved access to evidence-based medicine for hundreds of North Carolina children and families whose medical needs would otherwise go unmet.

The next invited commentary focuses on the pros and cons of technology on child and adolescent mental health. In "The Impact of Technology on Youth Mental Health: Challenges and Opportunities," Jacqueline Nesi, postdoctoral fellow at Brown University and the Bradley Hasbro Research Center in Rhode Island, provides a comprehensive

and balanced assessment of the benefits and costs of digital technologies on today's youth [17]. Nesi opens the commentary with some startling statistics. For instance, US children under the age of two spend an average of 42 minutes per day with screen media and 95% of adolescents between 13 and 18 have access to a smartphone [17]. Nesi also reported that 88% of teens have access to a desktop or laptop at home and that 45% of teens in the United States are online "almost constantly," electing to take part in multiple interactive social media platforms (eg, Instagram, Facebook, messaging apps, YouTube, and Reddit) around the clock [17]. Despite these evolving realities, Nesi points out that the impact of increased exposure to digital technologies is not uniformly negative.

For instance, Nesi points out that many social media sites (eg, Facebook) have implemented screening procedures for users whose posts might reveal signs of distress or suicidal thinking [17]. In addition, crisis texting services are now available 24/7 free of charge nationwide for anyone who elects to reach out. One of the more popular crisis texting platforms is Crisis Text Line (CTL; text HOME to 741-741) and it is staffed by a national workforce of over 5,000 volunteer crisis counselors. CTL has facilitated almost 130 million crisis conversations nationwide since 2013 [18].

In a sidebar related to Nesi's excellent commentary, Eric Youngstrom, professor of psychology at the University of North Carolina (UNC) at Chapel Hill, and Arina Cotuna, a clinical psychology graduate student at Appalachian State University, promote using digital platforms to disseminate psychological science to the public more broadly. In "Helping Give Away Psychological Science: Putting Information and Resources Where the Public and Professionals Can Use Them," Youngstrom and Cotuna provide a compelling rationale for publishing credible information on youth mental health on well-known internet sites like Wikipedia and Wikiversity [19]. First developed by Youngstrom and his students at UNC, Helping Give Away Psychological Science (HGAPS) is a student-centered nonprofit (501c3) that is committed to disseminating psychological science for the public good. HGAPS now has chapters at universities across the country, including ASU and the University of California-Los Angeles. Both the UNC and ASU chapters have collaborated to produce and publish important content on Wikiversity regarding the controversial Netflix Series *13 Reasons Why* (13RW), which dramatized the events surrounding the suicide of an adolescent female and included the graphic depiction of her death by suicide. Though the suicide scene from Season 1 was recently cut from the series, the debate continues about whether exposing youth to this material has adverse effects on youth mental health. There are several studies that support a temporal link between the release of Season 1 and increased internet searches using keywords like "how to kill yourself" [20], unexpected increases in suicide deaths in the months following the release [21], and increased suicidality for those who watched 13RW who were already struggling with mental health ailments [22]. At the same time, there is evidence that recent media portrayals of suicide, including 13RW Season 2 and actual celebrity suicides (Anthony Bourdain, Kate Spade), have led to temporary but significant spikes in help-seeking via crisis intervention resources like CTL [23]. Thus, similar to the information presented here, it is the mission of HGAPS to present scientifically credible and helpful summaries about current topics in psychology (eg, suicide) available for public consumption in short order.

The invited commentary that follows Youngstrom and Cotuna shifts to a discussion regarding diagnostic disparities relevant to youth mental health. In "Disparities in Behavioral Health Diagnoses: Considering Racial and Ethnic Youth Groups," Brenden Hargett, North Carolina Board-licensed professional counselor and a licensed clinical addictions specialist at High Point University, provides a poignant analysis of how longstanding patterns of diagnostic practices have adversely affected particular racial and ethnic youth populations [24]. Hargett opens the commentary with a reminder of the 2003 report published by the National Academy of Medicine that provided a detailed summary of the nature and scope of the problem of diagnostic disparities in behavioral health care along with a set of remedial recommendations [25]. Hargett further reports that despite efforts to correct historic injustices and diagnostic disparities in behavioral health, biased and stereotyped practices remain a persistent and uncomfortable truth in many sectors of mental health care systems that disproportionately impact specific racial and ethnic populations.

Hargett highlights some of the key evidence in support of diagnostic and practice disparities, including the fact that for adolescents who experience an episode of depression, African American, Asian, and Hispanic youth were much less likely to receive appropriate treatment when compared to non-Hispanic, White peers [24]. Other disturbing examples include African American youth being assigned conduct disorder diagnoses when their White counterparts were being diagnosed with anxiety and substance abuse disorders based on very similar symptom presentations [24]. Consequently, Hargett makes a convincing argument that clinicians, diagnosticians, and policymakers should heed these realities and recommit themselves to their codes of ethical practice by promoting culturally responsive interventions and wellness among the cultures they serve.

In "ADHD in North Carolina," Will Canu, professor of psychology at ASU, discusses the overall picture of assessing and treating attention-deficit hyperactivity disorders (ADHD) in our state. One of Canu's first points is that the prevalence of ADHD in North Carolina has increased over the past two decades; from 9.6% lifetime diagnosis in 2003 to 14.4% in 2011 [26]. Canu reports that these base rates are higher than the US average and that North Carolina ranks seventh nationally [26]. Canu further explains that these data pertain mostly to child and adolescent populations

and that much less is known about the epidemiologic trends for college-aged individuals and young adults, but based on prevalence estimates in younger populations he conjectures that the rates among young adults likely mirror these findings.

Canu asserts that while the latest assessment guidelines align well with current intervention recommendations published in the empirical literature, it is not yet clear whether these standards are being implemented consistently in everyday practice. Despite these uncertainties, Canu urges that we invest more in training and developing competent ADHD practitioners, especially in remote regions in the state that have long-standing professional shortages, and that we more intentionally integrate the AAP guidelines for ADHD assessment and treatment into existing health care and educational settings, such as primary care and K-12 public SMH paradigms [26].

Anchoring the list of invited commentaries on youth mental health, Lisa Curtin, professor of psychology and director of clinical training at ASU, and Emily Rowe, clinical psychology graduate student at ASU, discuss broadly the prevalence and negative implications of substance use and misuse among youth in "Substance Use and Misuse Among Youth." Curtin and Rowe present current epidemiological findings that indicate over 1 in 4 North Carolina teens report drinking alcohol at least once during the past 30 days and that about 12% report at least one heavy drinking episode during the past month [27]. Curtin and Rowe further emphasize that substance use prior to the age of 15 is one of the best predictors of substance abuse during the adult years [27]. Given the prevalence and the potential for serious addiction taking root, Curtin and Rowe urge practitioners, administrators, and policymakers to think "outside of the box" and promote creative methods of serving youth much earlier and more effectively in the years ahead. Curtin and Rowe offer two practical recommendations in light of these data: including routine screening as a regular feature in pediatric primary care and family medicine settings, and implementing brief interventions, especially motivational interviewing, early in the process as a feasible and effective method of treatment for youth at risk for substance abuse disorders [27].

In a Tar Heel Footprints in Health Care column, Matt Hoskins, assistant director of exceptional children at the North Carolina Department of Public Instruction, honors the career and contributions of Bill Hussey, a tireless advocate for youth mental health in North Carolina. Hoskins highlights some of Hussey's key initiatives, including his seminal work on the Willie M. Program, which helped set the tone for mental health reforms in the way clinicians and educators conceptualized and managed mental illness among children and adolescents in North Carolina. Bill is also well known for his long-standing commitment to building trusting relationships and his instrumental efforts to build a statewide and sustainable coalition for school mental health advocacy [28].

The closing article in this issue on youth mental health is the Spotlight on the Safety Net column written by Kaitlin Ugolik Phillips, managing editor of this journal. In the piece titled "North Carolina Families United Supports Mental and Behavioral Health for Children and Families," Ugolik Phillips opens with a poignant case example that serves as a good reminder of some of our core values as health care providers [29]. That is, we are committed not only to helping our patients recover and improve, but we must also attend to and be compassionate about the broader family system. Indeed, our capacity to help individuals depends largely on our ability to enlist the support and advocacy of our patients' loved ones. Ugolik Phillips helps close this issue on a high note by emphasizing how organizations like North Carolina Families United are instrumental in helping to restore our youth and in promoting their potential to experience more fulfilling lives. NCMJ

**Kurt D. Michael, PhD** Stanley R. Aeschleman Distinguished Professor and assistant chairperson, Department of Psychology, Appalachian State University, Boone, North Carolina.

## Acknowledgments

Potential conflicst of interest. K.D.M. has no relevent conflicts of interest.

## References

1. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey replication. Arch Gen Psychiatry. 2005;62(6):593-602. doi: 10.1001/archpsyc.62.6.593.
2. Mojtabai R, Olfson M, Han B. National trends in the prevalence and treatment of depression in adolescents and young adults. Pediatrics. 2016;138(6):1-10.
3. Ustün TB, Kessler RC. Global burden of depressive disorders: The issue of duration. Br J Psychiatry. 2002;181:181-183. doi: https://doi.org/10.1192/bjp.181.3.181
4. Murphy SL, Xu J, Kochanek KD, Arias E. Mortality in the United States, 2017. NCHS Data Brief, no 328. Hyattsville, MD: National Center for Health Statistics; 2018. https://www.cdc.gov/nchs/data/databriefs/db328-h.pdf. Accessed January 22, 2020.
5. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance – United States, 2017. MMWR Surveill Summ. 2018;67(8):1-114. doi: 10.15585/mmwr.ss6708a1
6. Michael KD, Renkert LE, Wandler J, Stamey T. Cultivating a new harvest: Rationale and preliminary results from a growing interdisciplinary rural school mental health program. Adv Sch Ment Health Promot. 2011;2(2):40-50. https://doi.org/10.1080/1754730X.2009.9715703
7. Albright A, Micha.el K, Massey C, Sale R, Kirk A, Egan T. An evaluation of an interdisciplinary rural school mental health programme in Appalachia. Adv Sch Ment Health Promot. 2013;6(3):189-202. https://doi.org/10.1080/1754730X.2013.808890
8. Michael KD, George MW, Splett JW, et al. Preliminary outcomes of a multi-site, school-based modular intervention for adolescents experiencing mood difficulties. J Child Fam Stud. 2016;25:1903-1915. https://doi.org/10.1007/s10826-016-0373-1
9. Kirk A, Michael KD, Bergman S, Schorr M, Jameson JP. Dose response effects of cognitive-behavioral therapy in a school mental health program. Cogn Behav Ther. 2019;48(6):497-516. doi: 10.1080/16506073.2018.1550527
10. Michael KD, Jameson JP, Sale R, et al. A revision and extension of the Prevention of Escalating Adolescent Crisis Events (PEACE) protocol. Child Youth Serv Rev. 2015;59:57-62. https://doi.org/10.1016/j.childyouth.2015.10.014
11. Capps RE, Michael KD, Jameson JP. Lethal means and adolescent suicide risk: An expansion of the PEACE protocol. J Rural Ment Health. 2019;43(1):3-16. http://dx.doi.org/10.1037/rmh0000108 12. Jame-

son JP. Responding to adolescents at risk of suicide: Implications of the ideation-to-action framework. N C Med J. 2020;81(2):106-110 (in this issue).
13. Deisenhammer EA, Ing CM, Strauss R, Kemmler G, Hinterhuber H, Weiss EM. The duration of the suicidal process: How much time is left for intervention between consideration and accomplishment of a suicide attempt? J Clin Psychiatry. 2009;70(1):19-24.
14. Moran-Bates J. Youth suicide legislation in the 2019 session of the North Carolina General Assembly. N C Med J. 2020;81(2):108-109 (in this issue).
15. Schultz BK, Al-Hammori D, Mirabelli K, Gaither L. Mental health services in North Carolina's public schools. N C Med J. 2020;81(2):111-115 (in this issue).
16. North S. Addressing students' mental health needs via telehealth. N C Med J. 2020;81(2):112-113 (in this issue).
17. Nesi J. The impact of technology on youth mental health: Challenges and opportunities. N C Med J. 2020;81(2):116-121 (in this issue).
18. Crisis Trends. Crisis Text Line website. www.crisistrends.org. Accessed January 22, 2020.
19. Youngstrom E, Cotuna A, Michael K. Helping give away psychological science: Putting information and resources where the public and professionals can find and use it. N C Med J. 2020;81(2):117-119 (in this issue).
20. Ayers JW, Althouse BM, Leas EC, Dredze M, Allem JP. Internet searches for suicide following the release of 13 Reasons Why. JAMA Intern Med. 2017;177(10):1527-1529. doi: 10.1001/jamainternmed.2017.3333
21. Sinyor M, Williams M, Tran US, et al. Suicides in young people in Ontario following the release of "13 Reasons Why." Can J Psychiatry. 2019;64(11):798-804. doi: 10.1177/0706743719870507
22. Hong V, Ewell Foster CJ, Magness CS, McGuire TC, Smith PK, King CA. 13 Reasons Why: Viewing patterns and perceived impact among youths at risk of suicide. Psychiatr Serv. 2019;70(2):107-114. doi: 10.1176/appi.ps.201800384
23. Sugg MM, Michael KD, Stevens SE, Filbin R, Weiser J, Runkle JD. Crisis text patterns in youth following the release of 13 Reasons Why Season 2 and celebrity suicides: A case study of summer 2018. Prev Med Rep. 2019;16:1-5. https://doi.org/10.1016/j.pmedr.2019.100999
24. Hargett BA. Disparities in behavioral health diagnoses: Considering racial and ethnic youth groups. N C Med J. 2020;81(2):126-129 (in this issue).
25. Smedley BD, Stith AY, Nelson AR, Institute of Medicine (US) Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, eds. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington, DC: National Academies Press; 2003.
26. Canu W. ADHD in North Carolina: Prevalence, treatment, and looking to the future. N C Med J. 2020;81(2):122-125 (in this issue).
27. Curtin L, Rowe E. Substance use and misuse among youth. N C Med J. 2020;81(2):130-133 (in this issue).
28. Hoskins MC. Bill Hussey: Fighting for our most vulnerable youth. N C Med J. 2020;81(2):85-86 (in this issue).
29. Phillips KU. North Carolina Families United supports mental and behavioral health for children and families. N C Med J. 2020;81(2):134-135 (in this issue).