

PROJECT WELL

AUGUST
2023

A Snapshot of **MENTAL WELL-BEING**
in Middle Tennessee



BELMONT DATA
COLLABORATIVE

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A Letter from Our Director

Let's talk about mental health and well-being. Because when we talk about it, we see that every individual and/or family have a story that has affected their lives. My family is no different as our son has been struggling with anxiety and depression post-COVID, including inpatient and outpatient care. But through the help of friends and colleagues, our son was able to find the help that he needed to a path of well-being.

Our story is not unique and the more we share our story, the more we hear from others about similar incidents. The truth is, we continue to struggle as a nation over 30% of individuals in the U.S. reporting that they experience anxiety or depression. It is worse for younger adults (ages 18 and 39) and the numbers also indicate that Tennessee ranks close to the top, tied for 3rd, for reported anxiety and depression right behind Louisiana, Oklahoma, and tied with Oregon. With these numbers, it is obvious why tackling this topic is so important for our community.

If you are familiar with the Belmont Data Collaborative, you know that we look to data to inspire others to actionable solutions within our communities. Our first project focused on health disparities (specifically hypertension) and over the past two years have created insights, convened individuals and organizations, and are now actively helping communities focus on hypertension programs with active and engaging partners.

Through this first project, we developed a process that we believe can spark and convene people to action: the Data Mindset (D-D-I-A Framework). This framework focuses first on the **Dilemma** to spark a conversation, then identifying the **Data** needed to provide **Insights** that lead to telling a story that inspires collaborative discussions that lead to **Action**. For this to work, we cannot do this alone, which is why our focus in the BDC is to use data to empower community partners.

One of those partners is CaringWays. They came to us in November 2021 to see if we could help them identify areas in Baltimore, MD, that have the highest vulnerability of youth with mental health needs. Their partner, Calais Campbell (football player for the Baltimore

Ravens), wanted to help inner Baltimore youth and did not know where to focus. With help from Avison Young, we were able to provide a map of the areas with the highest vulnerabilities. This plan was so successful that we are now looking to do the same thing here in Nashville and is the catalyst for this report.

This report is the first step for our newest initiative, Project Well. It is a conversation starter focusing on younger adults and their well-being. It is meant to be a starting point for discussions on the importance and the urgency of mental well-being and you can expect more insight and analysis in the future as well as updates from our partners like CaringWays. With the right insights and stories, we can help individuals like my son and so many other younger adults within our community.

How is our son doing today? He is better, with a growing community that supports him (above and beyond his family) he knows he is not alone. After his initial intervention in November 2021, he was able to go back to school in mid-December 2021. When confronted by fellow students about his absence, he chose to speak candidly about his experience. He noticed that his story was not unique and his road to recovery accelerated with his new support at school, and by talking about his struggles others were able to share and remove some of the stigma. Let's make mental health and well-being a meaningful conversation and normalize the topic. We all have a story and I hope you join me in wanting to start the conversation about Project Well, and through data we hope to inspire others to actionable and positive next steps and change.

MENTAL HEALTH

At a Glance

All values represent the estimated percent of the population/demographic that reports symptoms of anxiety disorder or depressive disorder.¹

Top 10 Vulnerable Counties in Middle Tennessee

RANK	COUNTY
1	Perry County, TN
2	Grundy County, TN
3	Wayne County, TN
4	Bedford County, TN
5	Lawrence County, TN
6	White County, TN
7	Lewis County, TN
8	Davidson County, TN
9	Overton County, TN
10	Macon County, TN Montgomery County, TN

Top 10 Vulnerable Zip Codes in Middle Tennessee

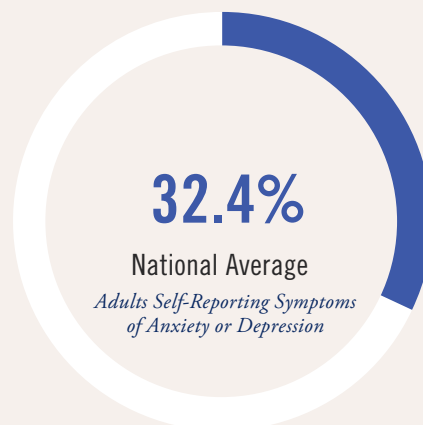
RANK	ZIP CODE
1	38425 <i>Clifton, TN</i>
2	37324 <i>Decherd, TN</i>
3	37160 <i>Shelbyville, TN</i>
4	37150 <i>Red Boiling Springs, TN</i>
5	38473 <i>Minor Hill, TN</i>
6	37210 <i>South Nashville, Nashville, TN</i>
7	37207 <i>Dickerson Pike Corridor, Nashville, TN</i>
8	37208 <i>North Nashville, Nashville, TN</i>
9	37137 <i>Nummelly, TN</i>
10	37217 <i>Briley Parkway/Priest Lake, Nashville, TN</i>

By State

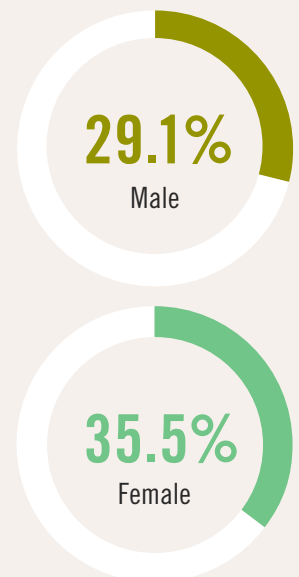
3RD

Tennessee Ranks Third in Reports of State Populations that Report Anxiety & Depression

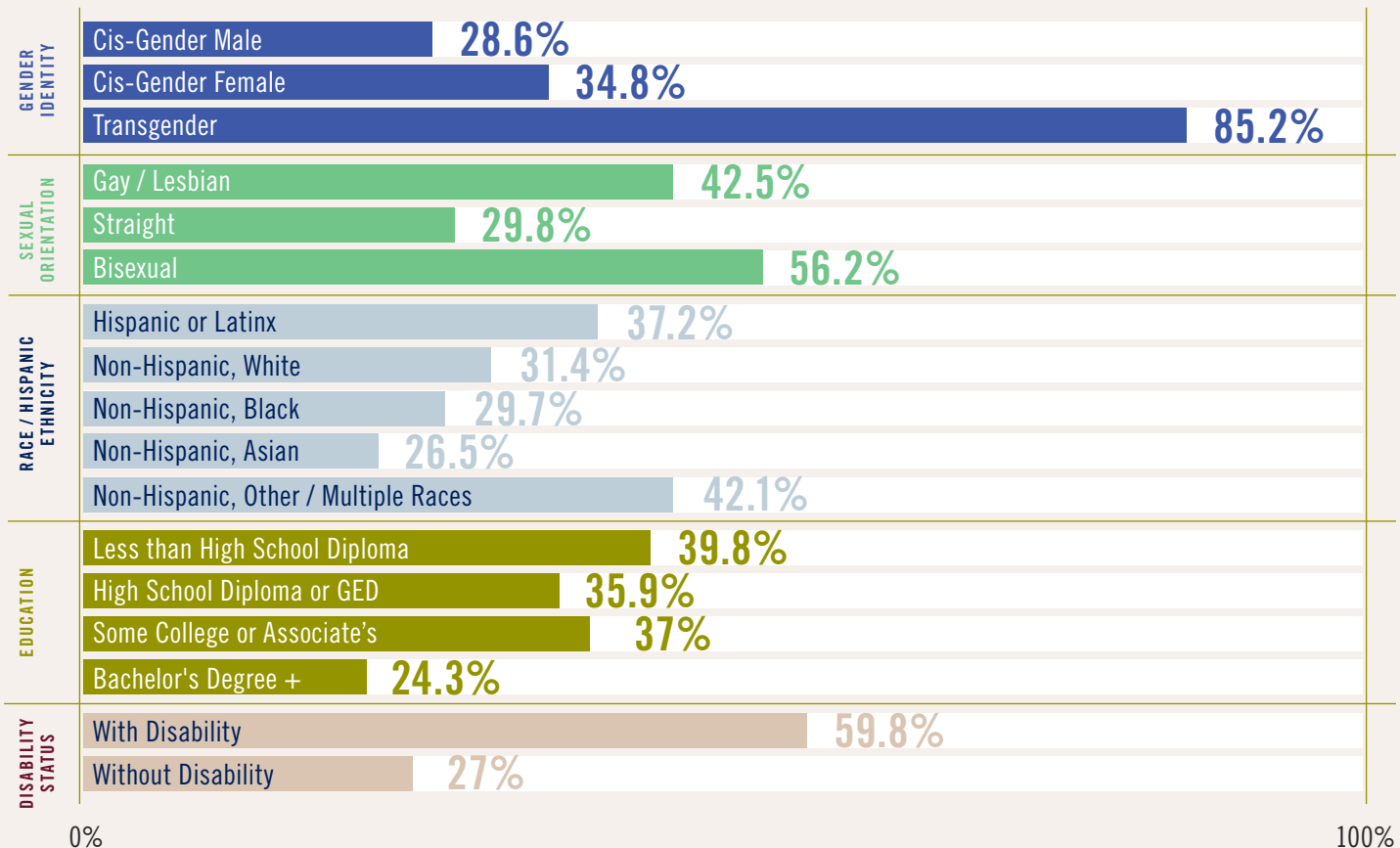
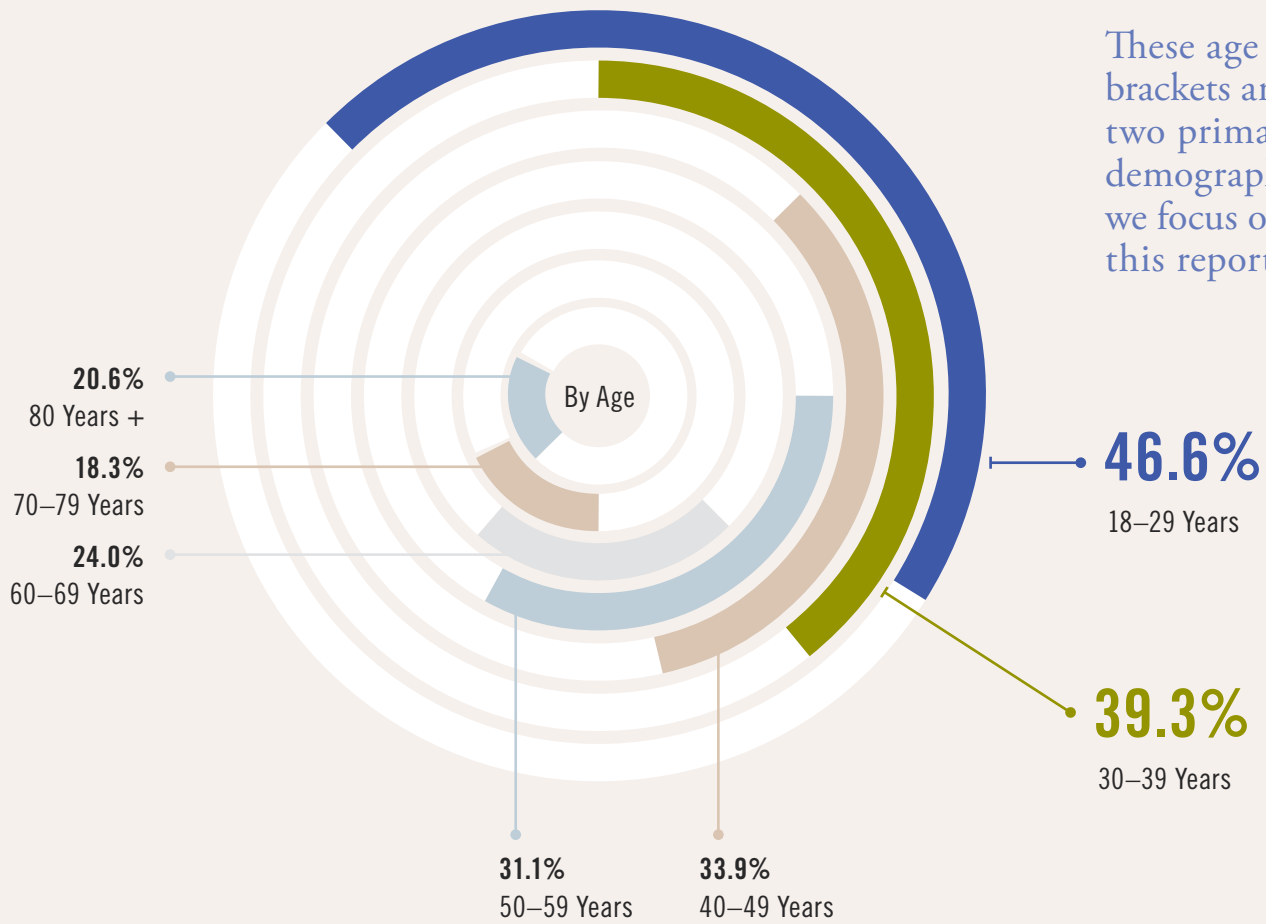
By Adults



By Sex



These age brackets are the two primary demographics we focus on in this report.



0%

100%

DATA FOR GOOD, DATA FOR DIVERSITY

Because Belmont Data Collaborative is committed to using data for the *good* of communities in Middle Tennessee, we are committed to using data for *diversity*.

We recognize that data is inherently biased.

Because of the legacy of both institutionalized and personal racism, data too often ignores, marginalizes, and misrepresents low-wealth communities and communities of color.

But data can also be a tool for equity. To move toward this goal, our approach must take up a framework of diversity from the outset. At Belmont Data Collaborative, we focus on infusing our data-informed work with diversity through **THREE KEY TOUCHPOINTS**.



Thought

What we bring to a conversation through experiences, information, and storytelling.



Perception

How we aim to evolve the mental impression that our data-informed story delivers to our audience.



Person

Whose voices we bring to a conversation to ensure all parties are included, valued, and considered.

OUR APPROACH

to Inspiring Social Innovation

DDIA

- 01 *Dilemma*
- 02 *Data*
- 03 *Insights*
- 04 *Action*

01 DILEMMA

We tackle truly puzzling situations where the way forward seems unclear.

At Belmont Data Collaborative, we take on some of the toughest challenges that threaten the well-being of our communities in Tennessee.

We look for focused community issues where there is widespread agreement on a need to take action but a lack of clarity around the best pathway forward.

02 DATA

We gather the best available information, recognizing it delivers an imperfect view.

For puzzles that are hard to solve, we collect reliable data that helps define the barriers keeping individuals and communities from thriving.

We acknowledge traditional approaches to data often misrecognize or ignore some communities. Instead, we seek to use data for good—through a lens that prioritizes the significance of diversity and the dignity of all communities.

Assessment

At **EACH STEP**, we seek measurable indicators of progress that accurately describe our results and validate our approach.

In this way, we build reflexivity into our process in order to **COURSE CORRECT** when needed and reach deeper levels of clarity.

OUR APPROACH

to Inspiring Social Innovation

DDIA

01

Dilemma

02

Data



03

Insights



04

Action



03

INSIGHTS

We use equity-infused analysis to generate a deep visualization of the data.

Through our exploration of the data, we summarize and contextualize the key challenges, gaps, and opportunities in order to highlight critical differences and relationships and conceptualize new ways forward.

When we start with an ethical framework and follow the data, we arrive at epiphanies that validate simple, innovative strategies that can have revelatory impact.



04

ACTION

We identify clear next steps to build momentum toward outcomes that empower.

We use our insights to invite key partners into a fruitful conversation about the best ways to take measurable, achievable steps that help communities in Tennessee overcome barriers and thrive.

Assessment

At **EACH STEP**, we seek measurable indicators of progress that accurately describe our results and validate our approach.

In this way, we build reflexivity into our process in order to **COURSE CORRECT** when needed and reach deeper levels of clarity.

ONE
Dilemma

HOW ARE WE DOING ON MENTAL HEALTH?



DILEMMA



DATA



INSIGHTS



ACTION

Despite real progress in raising awareness and expanding treatment, mental health remains a major challenge for the nation and for Tennessee.

There is widespread agreement that the isolation, fear, and loss of the COVID-19 pandemic intensified mental health challenges.

Tennessee is **TIED FOR THIRD** in the nation in reported symptoms of anxiety or depression—with more than **38.1 PERCENT** of the population reporting symptoms of anxiety or depression.²

The picture of mental health in the U.S. and in Tennessee is complex and multifaceted—but is it clear that people ages 18–39 are suffering in a particular way, and that mood and anxiety disorders are two of the most common mental health challenges Americans face.

In June 2023, **46.6 PERCENT** of Americans aged 18–29 and **39.3 PERCENT** aged 30–39 reported symptoms of anxiety or depression.³

NATIONALLY

1 in 5

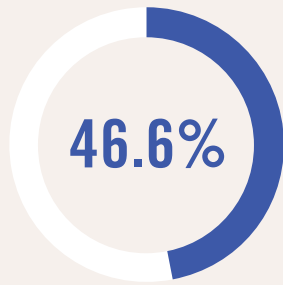
Adults Experience Diagnosed Mental Illness in Any Given Year⁴

1 in 20

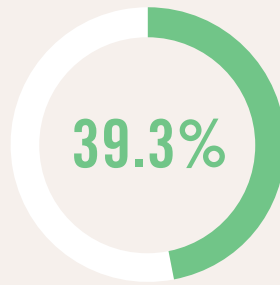
Adults Deal with a **Serious** Mental Illness⁵

1 in 6

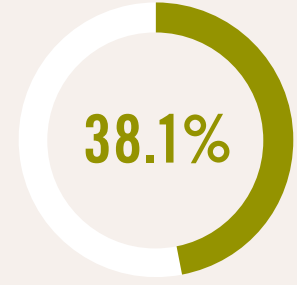
American Youth (6–17) Experience a Mental Health Disorder Each Year⁶



Of Americans Aged 18–29 Reported Symptoms of Anxiety or Depression in 2023⁷



Of Americans Aged 30–39 Reported Symptoms of Anxiety or Depression in 2023⁸



Of Tennessee Residents Reported Symptoms of Anxiety or Depression in 2023⁹

These numbers are striking—but if anything, they probably *understate* how *pervasive* mental illness is because many are still reluctant to report mental illness or talk about it.

Misunderstanding

There are still lots of myths about mental illness that are widely believed—for instance, the idea that someone who is anxious or depressed enough to impact their school or job performance could just *snap out of it* if they really wanted to.

Stigma

Powerful cultural attitudes continue to generate negative responses to mental illness that prevent those who are suffering from talking about their experience and receiving the help they need.

When young men learn notions of masculinity that forbid some kinds of emotional expression, admitting mental illness can seem impossible.

Religious beliefs that interpret all personal challenges as spiritual issues can downplay mental health diagnosis and treatment.

Representations in popular culture of those suffering from mental illness as “crazy people” who need to be separated from society strongly discourage many from admitting they need help.

IDENTIFICATION

What's the result of this failure of identification?

On the one hand, because people who are suffering often fail to understand their experience as mental illness—they do not seek or receive the help they need.

On the other hand, because families and communities surrounding those who are suffering often fail to recognize mental illness—they do not connect their loved ones to effective treatment options. This crisis of identification is a priority because without recognition of mental illness, progress toward other goals is not possible.

Identification comes first, but it is not enough by itself to improve mental health outcomes. That's why we are also focused on three other objectives as we move through the data on vulnerability to mental illness in Middle Tennessee:

PREVENTION

What kinds of intervention can prevent the onset of mental illness for those who are moderate or high risk? These proactive interventions can focus on either building positive **mental health resilience** before problems occur or **addressing risk factors** that make communities more vulnerable to the onset of mental illness.

CULTURE

How can we disrupt the sources of stigma surrounding mental illness?

TREATMENT

How can we approach treatment effectively so that it focuses on long-term mental and physical health and functioning?

TWO
Data

APPROACHING MENTAL HEALTH THROUGH A DATA MINDSET



DILEMMA

One of the best ways to gauge the broad well-being of communities is to look at Social Determinants of Health. These are the societal and economic conditions that make people more vulnerable to poor health.



DATA

They include measures like income level and food security—but also adverse childhood experiences, exposure to pollution, and lack of access to transportation or health care.



INSIGHTS

Social determinants help identify the **big, upstream challenges** that put communities and individuals in tough situations and **limit choices** that could promote a healthier lifestyle. Eating more fresh fruits and vegetables is more difficult for residents of a community where there are more fast-food restaurants than grocery stores.



ACTION

Social Determinants also help clarify what collaborative or policy actions can make the most impact in addressing a difficult issue.

Community partners can identify reasons for the absence of grocery stores and identify actions to address the need and reduce vulnerability to poor health.

Because the Belmont Data Collaborative is dedicated to looking at community-level problems, we have created community vulnerability indices to help identify upstream challenges. Our goal is to help communities move forward by offering a clear picture of the drivers of vulnerability and a viable pathway toward action that can make a difference.

SOCIAL DETERMINANTS

Social determinants can also help gauge a community’s mental health vulnerabilities.¹⁰

Just as with community health broadly, social determinants can help identify the societal and economic landscape that impacts a community’s mental health status.

Structural stressors—from employment and income insecurity to poor air quality and lack of green space—contribute significantly to mental health vulnerabilities, and the most effective approach to improving mental health outcomes will focus on these structural issues.

That’s why we make use of the Social Determinants of Mental Health framework, which identifies four major areas of social impact on mental health risk in communities.

An approach to mental health using social determinants also captures a more complete view than traditional measures, which rely heavily on data from health insurance companies.

Traditional measures of mental health vulnerability fail to recognize community members who do not have access to health insurance or who are reluctant to engage with health insurance companies—and these are often community members who have the highest levels of mental health vulnerability.

Here are the 16 domains that make up the Social Determinants of Mental Health framework; we have labeled these determinants as red, yellow, or green based on our level of confidence that our data sources reflect the SDoMH framework.

Highly Detrimental U.S. Social Problems

- ADVERSE CHILDHOOD EXPERIENCE
- DISCRIMINATION OR SOCIAL EXCLUSION
- EXPOSURE TO VIOLENCE
- CRIMINAL JUSTICE INVOLVEMENT

Socioeconomic Status and Opportunities for Accruing Wealth

- LOW EDUCATIONAL ATTAINMENT
- UNEMPLOYMENT OR JOB INSECURITY
- POVERTY AND INCOME INEQUALITY
- NEIGHBORHOOD POVERTY

Basic Needs

- HOUSING STABILITY
- FOOD INSECURITY
- POOR OR UNEQUAL ACCESS TO TRANSPORTATION
- POOR ACCESS TO HEALTH CARE

Immediate and Global Physical Environment

- ADVERSE BUILT ENVIRONMENT
- NEIGHBORHOOD DISORDER
- EXPOSURE TO POLLUTION
- IMPACT OF CLIMATE CHANGE

● HAVE IDENTIFIED RELEVANT, GEOGRAPHICALLY GRANULAR DATA

● HAVE IDENTIFIED PARTIALLY-RELEVANT DATA OR DATA DOES NOT HAVE DESIRED GEOGRAPHIC GRANULARITY

● HAVE NOT IDENTIFIED RELEVANT DATA SOURCE



A COMMUNITY MENTAL WELL- BEING VULNERABILITY INDEX FOR MIDDLE TENNESSEE

To capture the Social Determinants of Mental Health framework with a data driven approach, the Belmont Data Collaborative created a Mental Health Index for communities across 41 counties in Middle Tennessee drawing on a variety of publicly available datasets.

The closer an index score for a particular area is to 1, the higher the vulnerability is for that geography.

Our methodology is based on the CDC's Social Vulnerability Index. Our dataset selects **21 VARIABLES**—each available at the county, zip code, and census tract level—that provide a view of mental health vulnerability based on the four major themes and 16 subcategories of the Social Determinants of Mental Health framework.

The index uses a comparative scoring methodology on a scale of 0 to 1. A geographic area that has low vulnerability related to one of the 21 social determinants will receive an index score of 0. The closer an index score for a particular area is to 1, the higher the vulnerability is for that geography.

DATA OFFERS A HELPFUL (BUT IMPERFECT) VIEW

At its best, data helps us clarify problems that seem overwhelming and focus dialogue in the most efficient, effective way.

But data is not a silver bullet—it gives us an imperfect view of the world, and there are always gaps in the picture data paints of people, their communities, and the complex challenges they face.

We believe that honesty about where our data is lacking can inspire potential collaborators to help fill in the gaps and generate more robust conversation about the shared path to progress on mental health outcomes in Middle Tennessee.



NOTE FROM OUR EXECUTIVE DIRECTOR

Community level data, like census tract information, is meant to capture the essence of a community, not to speak to specific individuals within that community.



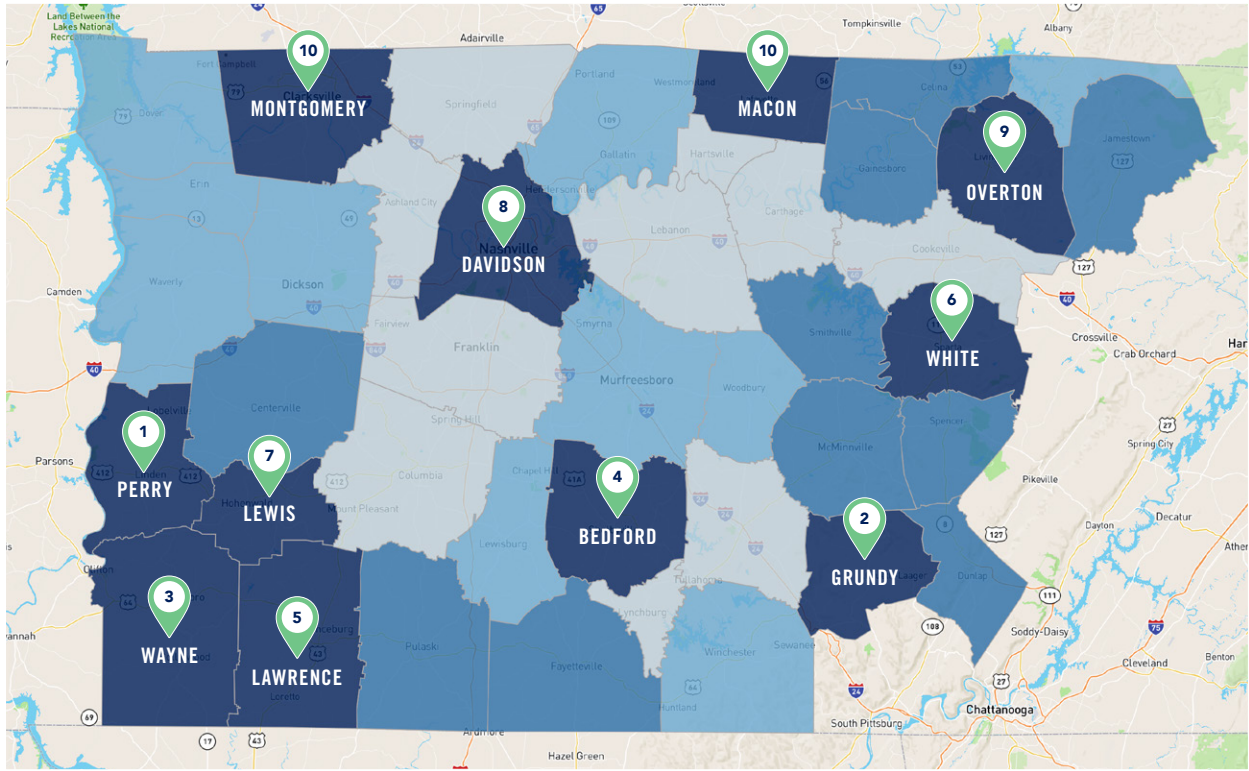
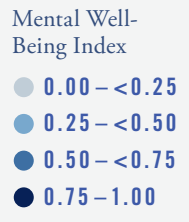


FIGURE 01
Mental Well-Being Vulnerability at the County Level¹¹



DILEMMA



DATA



INSIGHTS



ACTION

THREE
Insights

SNAPSHOTS OF MENTAL HEALTH IN MIDDLE TENNESSEE

FIGURE 01
Mental Health Vulnerability at the County Level

Many of the areas with highest mental health vulnerability are **RURAL COUNTRIES**.

Of the top 11 most vulnerable counties in Middle Tennessee, **9** are rural.¹²

FIGURE 02

High Vulnerability in Rural Areas

The southwest corner of Middle Tennessee contains a cluster of rural counties with high mental health vulnerability.

This area includes 4 of the top 7 most vulnerable counties in Middle Tennessee.

In these four counties—median income, life expectancy, educational attainment, and voting representation are lower than the average across Middle Tennessee’s 41 counties.

The share of the population dealing with food insecurity and disconnected youth—who are not in school or participating in the job market—are higher than the regional average.



FIGURE 02

COUNTY	MENTAL WELL-BEING INDEX	POPULATION	MEDIAN HHD INCOME	LIFE EXPECTANCY	FOOD INSECURE	DISCONNECTED YOUTH	MINORITY POPULATION	NO HS DIPLOMA	VOTING POPULATION
Perry County	1.000	8,313	\$51,786	74.8	13.7%	13.9%	9.0%	21.7%	49.5%
Wayne County	0.951	16,350	\$45,402	73.9	8.9%	15.5%	10.8%	14.7%	48.0%
Lawrence County	0.902	43,967	\$45,721	75	1.6%	12.9%	7.4%	13.7%	54.8%
Lewis County	0.854	12,485	\$38,664	75.4	17.0%	4.8%	7.6%	16.2%	55.2%
Middle TN Overall	—	2,846,049	\$71,518	76.7	7.4%	6.3%	25.8%	10.7%	56.3%

FIGURE 03

Zip Code Level Reveals Urban Complexities (and Inequities)¹³

Mental Well-Being Index

- 0.00 – <0.25
- 0.25 – <0.50
- 0.50 – <0.75
- 0.75 – 1.00

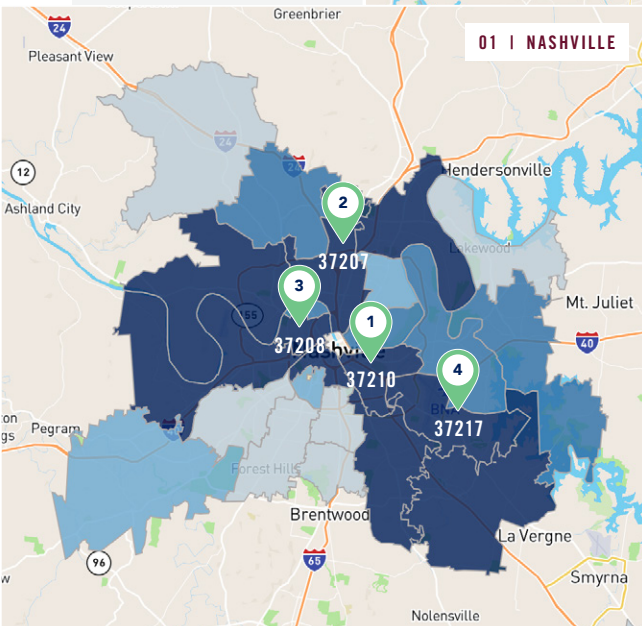
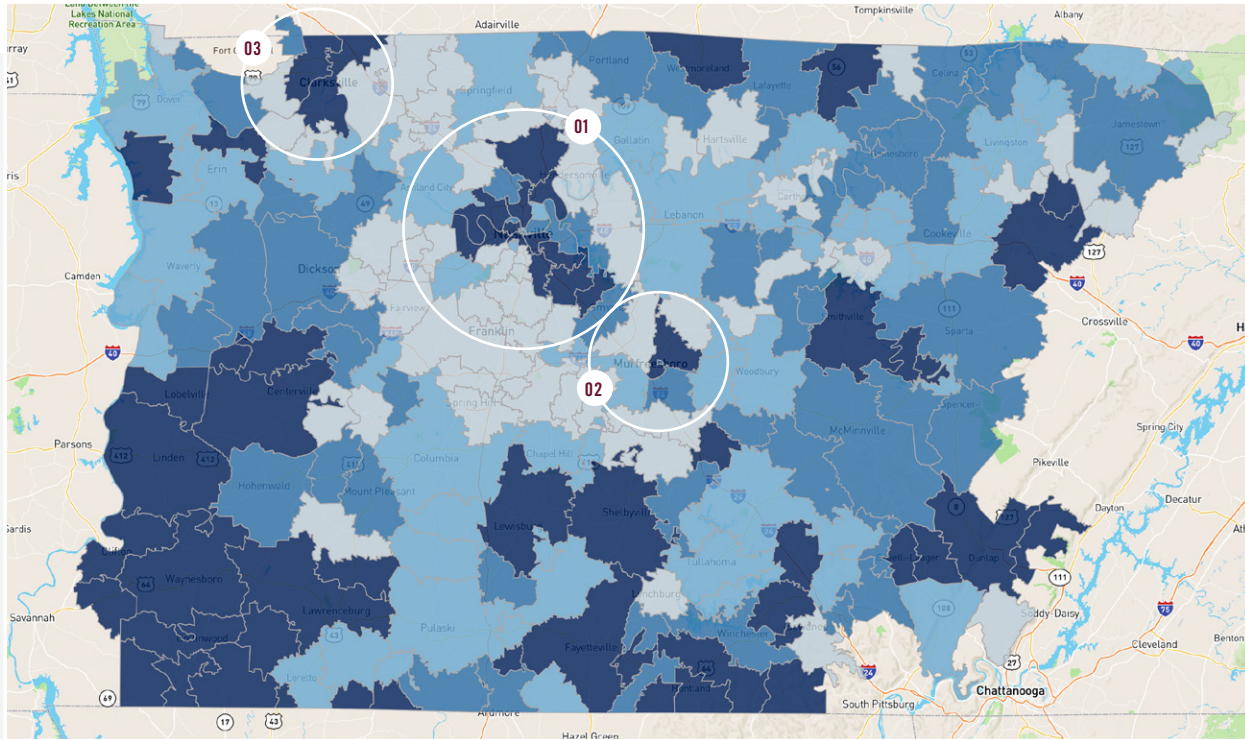


FIGURE 03 | FIGURE 04

Zip Code Level Reveals Urban Complexities (and Inequities)

Home to Nashville, Davidson County is by far the largest urban area in Middle Tennessee. At the county level (FIGURE 01 on page 16), Davidson seems to be uniformly high risk.

Nashville has extremely vulnerable neighborhoods—9 of 21 Nashville zip codes fall in the high vulnerability category, including **4 OF THE TOP 10** in Middle Tennessee.

Nashville is also a story of extremes: 2 of the top 10 least vulnerable zip codes in the region are also found in the metro area.

The communities in Davidson County that are suffering more are also those that have a higher population density, a lower median income, and a lower life expectancy than Nashville area zip codes that are not in the highest vulnerability group.

FIGURE 04

ZIP CODE	MENTAL WELL-BEING INDEX	MINORITY POPULATION	MEDIAN HHDI INCOME	NO HS DIPLOMA	LIFE EXPECTANCY	VOTING POPULATION
37210	0.979	58.1%	\$40,945	17.0%	72.3	36.4%
37207	0.975	76.2%	\$52,827	13.5%	72.3	51.4%
37208	0.971	68.1%	\$54,296	12.0%	70.7	45.8%
37217	0.963	56.5%	\$52,495	15.4%	74.8	38.8%
Low-Mod Vulnerability Nashville Zip Codes	0.401	26.4%	\$85,318	5.7%	78.1	63.9%

For comparison purposes, we are looking at the 12 Nashville zip-codes that fall into the Low or Moderate Vulnerability categories (MWB Index < 0.80)¹⁴

FIGURE 05

High Vulnerability Areas Emerge at Zip Code Level

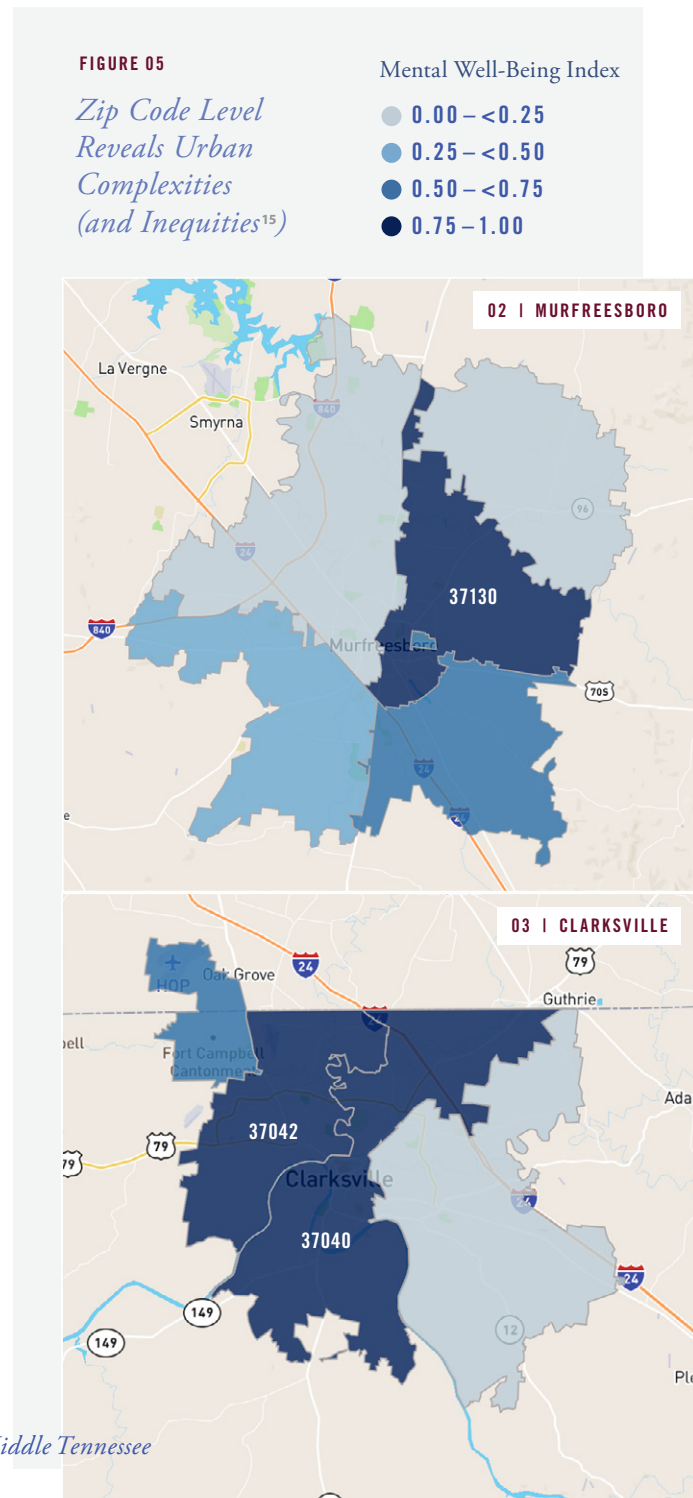
The more granular zip code data highlights other high risk areas that don't register on the county level maps.

One of these areas is Rutherford County, which appears as an area of low-moderate risk (.29) at the county level. At the zip code level, however, we see stark divergences within Rutherford: at the heart of the county, an area near the city of Murfreesboro of very high vulnerability (.87) is surrounded on each side by areas of very low vulnerability (.12 and .17).

A similar story emerges in Montgomery, where high-moderate vulnerability (.77) at the county level spiders at the zip code level into striking differences: around Clarksville and Fort Campbell are two highly vulnerable zip codes (.85 and .9) that are next door to three areas of much lower risk (.18, .12, and .05).

These neighborhoods also have much lower levels of representation through voting: at the extremes, *30 points lower* than the average of Nashville's lower vulnerability communities.

These contrasts provide an opportunity to identify some of the factors that are driving higher mental health vulnerability in Middle Tennessee.



In both Rutherford and Montgomery, higher vulnerability areas are characterized most dramatically by differences in *three thematic areas*.

U.S. Societal Problems

The most powerful difference driving vulnerability here is **total crime index**, but there are also significant gaps in child poverty and the percentage of youth disconnected from school and employment.

Basic Needs

In both counties, high vulnerability is driven by lack of health insurance and houses with no vehicle.

In Rutherford—one of the most active Nashville commuter counties—the highest vulnerability area has almost **twice as many households with no vehicle** as the low vulnerability areas next door.

Montgomery County's high vulnerability zip codes see much higher rates of food insecurity (a population that combines low income with low access to healthy food options).

Physical Environment

Higher vulnerability areas in both counties have lower rates of voter participation, less green space, and fewer social associations.

Rutherford's high vulnerability area has less than **10% as many park acres** per 1,000 residents as adjacent low vulnerability zip codes.

In Montgomery County, **voter representation is more than 16 points lower** in high vulnerability areas.



FIGURE 06

Comparing Rural and Urban Vulnerabilities¹⁶

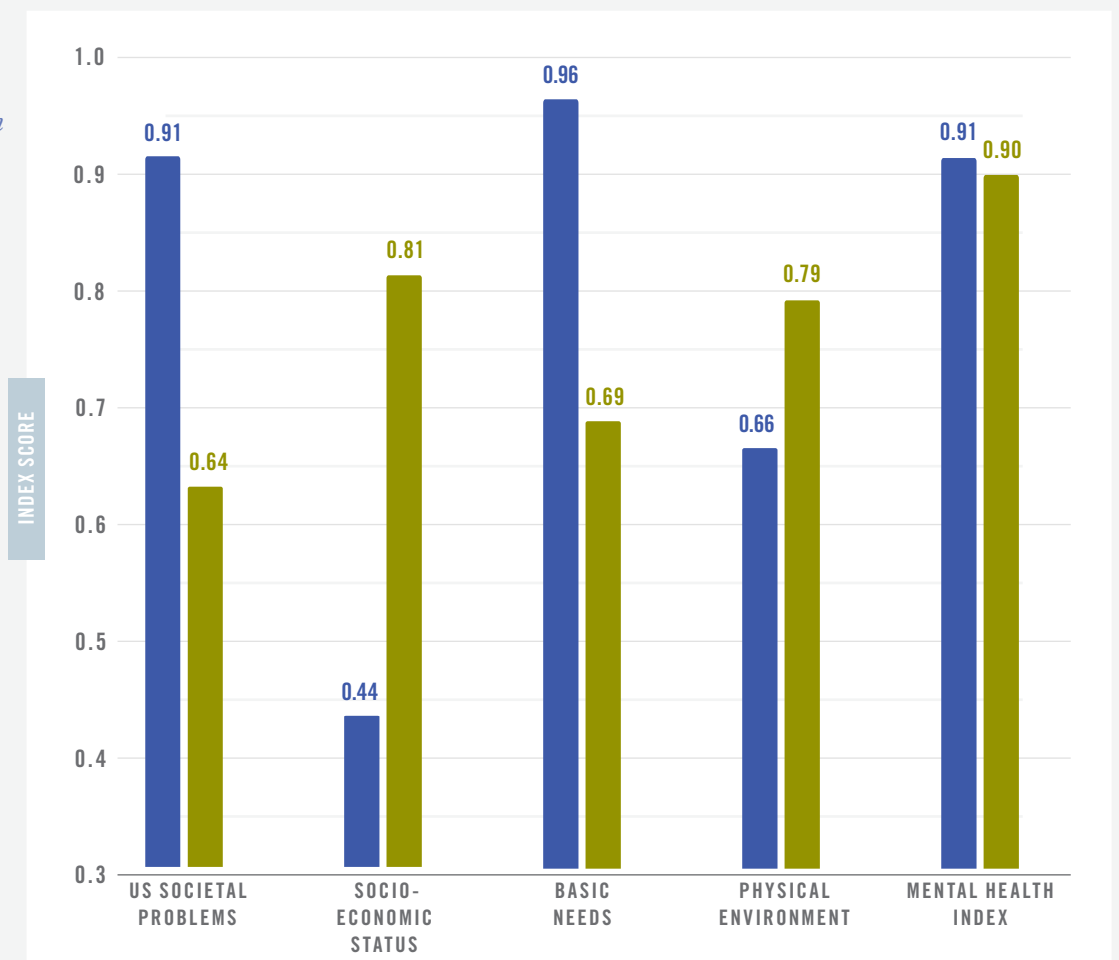


FIGURE 06

Comparing Rural and Urban Vulnerabilities

The data show that Middle Tennessee has hotspots of mental health vulnerability in both urban and rural communities.

For the highest risk communities, mental health vulnerability scores are **almost exactly the same for urban (.91) and rural (.90) areas.**

As **FIGURE 6** shows, however, there are major differences in the social determinants driving those vulnerabilities.

High mental health vulnerability in **rural** zip codes tends to be driven by **socioeconomic factors**—income, poverty, education, and job opportunities.

In **urban** zip codes, high vulnerability is more closely associated with **U.S. societal problems**—especially higher crime rates, less green space, and low voter representation.

FOUR
Action

CONTINUING THE CONVERSATION

by Starting 100 Others



DILEMMA



DATA



INSIGHTS



ACTION

Across Middle Tennessee, a broad range of communities show high vulnerability to mental illness—some are rural, some are urban, some are suburban commuter areas. Often high vulnerability areas are adjacent to (and even surrounded by) areas of much lower vulnerability.

There is no single blend of factors driving the vulnerabilities of all these communities—but as our snapshots shows, looking at the Social Determinants of Mental Health through the Mental Well-Being Index helps to paint a picture of what is driving vulnerability in a particular community.

What do we do with these snapshots of mental health? What is the way forward?

ONE

WE WANT TO CONTINUE THE CONVERSATION

One of the hardest things about mental health on an individual level is **talking about it**.

One of the most important pathways to responding well to mental illness is **talking about it**.

Because talking about mental illness is also hard at a community level, we want our snapshots of mental health—and the availability of a Mental Health Index for Middle Tennessee—to help start conversations.

Raising awareness about mental health is one big conversation that continues—and responding well to mental illness begins with starting hundreds of other conversations with people who want to see change.

TWO

WE WANT TO TALK WITH YOU

If you are aware of or have access to information that can improve our Mental Well-Being Index, please contact Belmont Data Collaborative to continue the conversation.

If you can connect us to organizations that want to help make a difference for mental health in Middle Tennessee, please contact Belmont Data Collaborative to continue the conversation.

If you can use the Mental Well-Being Index to help share the story of mental illness vulnerability in your community, Belmont Data Collaborative wants to help you convene a group of concerned individuals and organizations to continue the conversation.

**What do we do with these
snapshots of mental health?
What is the way forward?**

THREE

WE CAN HELP YOUR ORGANIZATION CONTINUE THE CONVERSATION

Belmont Data Collaborative can empower your business, nonprofit, school, or house of worship to be more aware of mental illness and become part of the solution in your community—please contact us so that we can help you continue the conversation.

Belmont Data Collaborative can provide access to the data your nonprofit organization needs to address mental illness in your area—please contact us so that we can help you continue the conversation.

FOUR

WE WANT TO COLLABORATE ON EFFECTIVE CHANGE

If you are a government decision-maker, elected official, organizer, or political advocate seeking policy changes to promote the well-being of your community—Belmont Data Collaborative wants to continue the conversation with you to help identify the most urgent priorities and the most effective strategies.

FINAL THOUGHTS

This report is the beginning, not the end. Data does not provide solutions. Instead, it starts important and provocative conversations that can clear pathways toward meaningful action. We hope this report sparks many fruitful conversations on mental illness in Middle Tennessee, and we are ready to help convene and facilitate conversations that lead to change.

More granularity is better.

As we saw in the Data section, new challenges emerge as we move from county level data to zip code level data. Looking more closely at the community level is critical to seeing the full complexity of the landscape on mental health vulnerabilities.

There is no magic cure for mental illness.

But there is clear hope. There is no one solution that will help all communities that are suffering across Middle Tennessee. But Belmont Data Collaborative is gathering the best data available, looking at it with clear eyes, working to fill the information gaps, and making it all accessible to communities and partners who are ready to help us do the work.

Conversation is the way forward.

For individuals, families, communities, and organizations—talking about mental illness is the best first step to increasing understanding, reducing stigma, fighting isolation, identifying and lowering barriers to resources, and taking steps toward improved mental well-being. Belmont Data Collaborative can help start those conversations.

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Dr. Marquinta Harvey serves in a dual role as Assistant Director of the Belmont Data Collaborative and Assistant Professor of Public Health - Epidemiology at Belmont University. Dr. Harvey is a leader within the fields of public health, data analytics, epidemiology, and behavioral neuroscience with over 15 years of experience ranging from biological and chemical warfare agent testing for the Department of Defense, to understanding the neurobiological mechanisms that control social stress. Dr. Harvey is a published author with publications in peer reviewed journals including Stress and Behavioral Neuroscience. She has presented research at many local, state, and national conferences. Dr. Harvey was named as a recipient of the inaugural University of Tennessee Knoxville Alumni Volunteer 40 under 40 award. Dr. Harvey is a devoted public health advocate with a passion for understanding and applying information obtained from health data and research to improve processes that lead to better health outcomes for vulnerable populations. She has expertise in fostering trusting relationships, team collaboration, problem solving and innovation, while providing leadership, management, and strategic vision.



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Tommy Strickler serves as the Manager of Data Analytics for Belmont University's Data Collaborative. His responsibilities include data curation and management, data warehouse oversight, predictive analytics, and training and management of junior data analysts. He holds a B.S. and M.S. in Statistics from the University of Tennessee with an emphasis in predictive modeling. Mr. Strickler brings 20 years of experience in data analytics in the areas of health care, insurance, and population health management. His areas of expertise include statistics, predictive modeling, data science techniques, index creation, social determinants of health, product ideation, and the product development life cycle. He is a frequent contributor to research projects resulting in conference presentations, trade and industry publications, and won a national award from the Center for Disease Control and Prevention for innovations in healthy behavior data collection.

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Dr. Bass serves as the Director of Belmont University’s Data Collaborative and holds a faculty position in the College of Business. Her areas of responsibility include data curation and management, analytics, overseeing the infusion of data experiences into Belmont’s programs and curriculum, and management of the Belmont Data Collaborative’s internal and external initiatives aimed at helping people and communities thrive. She holds a Ph.D. in Health and Human Performance with an emphasis in Population Health Management. Dr. Bass has over 20 years of experience in the health and wellness industry, including a national award from the Center for Disease Control and Prevention for innovations in healthy behavior data collection. Her areas of expertise include analytics, reporting, data management, social determinants of health, experimental design, needs assessment, intervention design and measurement, and survey science. Dr. Bass has authored articles for peer-reviewed and trade journals, speaks at industry conferences, and is active in the data and technology industry in Nashville.



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Ron Loeppke, MD, MPH, FACOEM, FACPM is currently Medical Advisor to the Belmont Data Collaborative and Vice Chairman Emeritus of U.S. Preventive Medicine (USPM). USPM provides primary, secondary and tertiary prevention and Population Health Management (wellness, health coaching and disease management) services for all size employers, health plans and government entities. Dr. Loeppke has over 35 years of clinical and physician executive experience in the Preventive Medicine, Medical Management, Disease Management, Population Health Management and Corporate Health arenas. He has authored more than 50 articles and book chapters relating to health services research in preventive medicine, occupational health, workplace wellness, population health and the business value of health.

KEY PARTNERS



Belmont University

Located near the heart of thriving Nashville, Tennessee, Belmont University consists of nearly 8,800 students who come from every state and 33 countries. The University is nationally recognized for its innovative approach as well as its commitment to undergraduate teaching (U.S. News & World Report). As a Christ-centered, student-focused community, Belmont's mission is to develop diverse leaders of purpose, character and wisdom who possess a transformational mindset and are eager and equipped to make the world a better place. With more than 115 areas of undergraduate study, 41 master's programs and five doctoral degrees, Belmont University aims to be the leading Christ-centered university in the world, producing leaders who will radically champion the pursuit of life abundant for all people.



Belmont Data Collaborative

The Belmont Data Collaborative (BDC) is an initiative at Belmont University that looks to infuse data skills into every facet of the culture and curriculum as well as within the community. It was founded in August 2021 and since its inception, the Belmont Data Collaborative has focused on data skills for all and to champion complex problems within the community. This includes data-driven community projects, projects within the community. Through the BDC, Belmont University will create data storytellers that can use data to provide meaningful insights and actionable stories. Not only will Belmont produce students that are data ready through classroom experiences, but through the BDC, students and faculty will have real-world projects for social innovation and the well-being of the community.

KEY PARTNERS



Avison Young

Avison Young creates economic, social and environmental value as a global real estate advisor, powered by people. At Avison Young, they believe in creating positive impact wherever we go.

There is a vital role for commercial real estate to create healthy, productive workplaces for employees, cities that are centers of prosperity for its citizens, and built spaces and places that create a net benefit to the economy, the environment and the community.

Their nimble, agile team has global insight, local market expertise and access to some of the smartest technology in the commercial real estate industry—all at the ready to work on creating your competitive advantage. As a private company, you will collaborate with an empowered partner who is invested in your success as much as you are.



CaringWays

CaringWays® is the first CareFunding platform that provides patients and their support network with a dedicated way to raise funds for healthcare-related expenses.

CaringWays® gives individuals, employers, nonprofits, and healthcare providers a way to provide tangible support to patients when they need it most.

Unlike other platforms, CaringWays® was built specifically for medical campaigns. We offer patients a trusted and dignified way to collect financial support throughout the medical journey. In addition, we give donors the confidence that their contributions will go directly towards healthcare-related expenses.

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TABLE 01 | DATA CONTRIBUTING TO MENTAL WELL-BEING INDEX

Primary SDoMH Category

Highly Detrimental US Society Problems	Socioeconomic Status and Opportunities for Accruing Wealth	Basic Needs in Terms of Housing, Food, Transportation, and Health Care	Immediate and Global Physical Environment
VARIABLE NAME	DESCRIPTIVE	SDOMH SUB-CATEGORY	DATA SOURCE
Child Households Below Poverty	Family Below Poverty Level (with Children) <i>Percentage of Households</i>	Adverse Childhood Experiences	American Community Survey <i>US Census</i>
Percent Disconnected Youth	Percent Disconnected Youth <i>Age 16–19 Not Enrolled in School and Unemployed/Not in Labor Force (2017–2021)</i>	Adverse Childhood Experiences	American Community Survey <i>US Census</i>
Total Crime Index	Total Crime Index <i>Geographic area’s crime risk relative to the national average.</i>	Exposure to Violence	FBI / Applied Geographic Solutions
Percent Population with No HS Diploma	People in Household Less than High School per capita age 25 and over in households (2017–2021)	Low Educational Attainment	American Community Survey <i>US Census</i>
Unemployment Rate	Percentage of Population 18 to 64 that is Unemployed (2017–2021)	Unemployment of Job Insecurity	American Community Survey <i>US Census</i>
Employment Access Index	The employment access index is a measure of job opportunity and can be used as a proxy for economic activity. The higher the index, the more job opportunities there are. (2016)	Unemployment of Job Insecurity	HUD Exchange
Employment Entropy Index	The employment entropy Index ranges from 0 to 1, with higher values indicating a greater degree of employment mix across industries. (2018)	Unemployment of Job Insecurity	US Census <i>Longitudinal Employer-Household Dynamics</i>
Income Inequality (Gini) Index	A summary measure of income inequality. The higher the value, the more inequality.	Poverty or Income Inequality	American Community Survey <i>US Census</i>
Percent Households below Poverty	Households Below Poverty Level <i>Percentage of Total Households (2017–2021)</i>	Neighborhood Poverty	American Community Survey <i>US Census</i>
Eviction Filing Rate	Eviction Filing Rate (2018) <i>Percent of rental housing units that have eviction filing</i>	Housing Instability	Eviction Lab
Rent as Percent of Gross Income	Median Gross Rent as a Percentage of Income (2017–2021)	Housing Instability	American Community Survey <i>US Census</i>
Housing Costs (Owners) as Percent of Gross Income	Median Selected Monthly Ownership Costs as a Percentage of Income (2017–2021)	Housing Instability	American Community Survey <i>US Census</i>
Food Insecurity <i>Percent Population Low-Income and Low-Access</i>	Low Income People 1 Miles Urban/10 Miles Rural with Low Access to Healthy Food per Capita (2019)	Food Insecurity	USDA Food Access Research Atlas
Percent Households with No Vehicle	Percent Households with No Vehicle (2017–2021) <i>Combination of Renter and Owner Households</i>	Poor or Unequal Access to Transportation	American Community Survey <i>US Census</i>
Percent Population with No Health Insurance	Health Insurance Coverage <i>Uninsured per Civilian Noninstitutionalized Capita (2017–2021)</i>	Poor Access to Healthcare	American Community Survey <i>US Census</i>
Walkability Index	Walkability Index (2019) <i>Converted from 2010 to 2020 Census Tracts and Aggregated to Zip Code/County</i>	Adverse Built Environment	US EPA Smart Growth Project
Park Acres per Capita	Park Area (acres) per 1,000 in Total Population	Adverse Built Environment	National Neighborhood Data Archive (NaNDA)
Percent Population that Votes	Percent of Over 18 Population within Geographic Region that Typically Votes in Local/State/Federal elections	Neighborhood Disorder	Redistricting Data Hub
Social Associations per Capita	Social Associations (Membership Organizations) per 1,000 in Total Population	Neighborhood Disorder	Census Business Patterns
Air Quality <i>Lifetime Cancer Risk</i>	Air Quality <i>Individual Lifetime Cancer Risk (2014)</i>	Exposure to Pollution	US EPA <i>National Air Toxics Assessment</i>
Air Quality <i>Respiratory Hazard Index</i>	Air Quality <i>Respiratory Hazard Index (2014)</i>	Exposure to Pollution	US EPA <i>National Air Toxics Assessment</i>

TABLE 02

Data by Zip Code—Nashville, TN

ZIP CODE	MENTAL WELL-BEING INDEX	MIDDLE TN RANK	POPULATION	DENSITY	MEDIAN HHDI INCOME	LIFE EXPECTANCY	FOOD INSECURE	DISCONNECTED YOUTH	MINORITY POPULATION	NO HS DIPLOMA	VOTING POPULATION
37210	0.979	6	16,593	1,758.7	\$40,945	72.3	43.4%	4.1%	58.1%	17.0%	36.4%
37207	0.975	7	40,697	2,086.9	\$52,827	72.3	13.1%	9.7%	76.2%	13.5%	51.4%
37208	0.971	8	19,546	3,931.5	\$54,296	70.7	12.4%	3.0%	68.1%	12.0%	45.8%
37217	0.963	10	31,096	1,611.0	\$52,295	74.8	1.7%	12.9%	56.5%	15.4%	38.8%
37211	0.958	11	75,073	3,455.5	\$61,781	78.6	3.6%	10.0%	47.7%	15.6%	43.4%
37013	0.921	20	102,184	2,389.5	\$61,801	76.7	12.7%	6.9%	63.3%	13.5%	42.8%
37203	0.892	27	18,100	4,311.7	\$59,406	71.3	3.8%	7.4%	42.1%	8.9%	38.3%
37218	0.888	28	15,056	371.9	\$48,619	73	7.5%	5.3%	80.2%	11.8%	57.8%
37115	0.842	39	41,274	1,867.2	\$52,448	74.9	13.5%	5.9%	59.9%	15.6%	43.1%
Avg. of Remaining Nashville Zip Codes	0.401	144.7	21,521	214.7	\$85,318	78.1	5.8%	6.1%	26.4%	5.7%	63.9%

TABLE 03

Comparison of Urban & Rural Geographies

US SOCIETAL PROBLEMS	GEOGRAPHY	HOUSEHOLDS WITH CHILD AND BELOW POVERTY LEVEL		DISCONNECTED YOUTH		TOTAL CRIME INDEX	
	Urban	6.6%	7.6%	156	Rural	7.1%	12.5%

SOCIOECONOMIC OPPORTUNITIES	GEOGRAPHY	MEDIAN HOUSEHOLD INCOME	HOUSEHOLDS BELOW POVERTY LEVEL	NO HS DIPLOMA	EMPLOYMENT ACCESS INDEX	EMPLOYMENT ENTROPY INDEX
	Urban	\$55,365	17.2%	12.2%	35,420.00	0.76
Rural	\$42,805	21.6%	18.0%	2,398.80	0.41	

BASIC NEEDS	GEOGRAPHY	EVICTON FILING RATE	POPULATION WITH NO HEALTH INSURANCE	HOUSEHOLDS WITH NO VEHICLE	LOW-INCOME AND LOW-ACCESS TO HEALTHY FOODS	RENT AS PERCENT OF GROSS INCOME
	Urban	7.40%	14.30%	8.60%	13.20%	31.50%
Rural	0.85%	13.10%	5.80%	8.20%	20.40%	

TABLE 04

Scores by Zip Code

NASHVILLE	ZIP CODE	MENTAL WELL-BEING INDEX	US SOCIETAL PROBLEMS	ECONOMIC STATUS	BASIC NEEDS	PHYSICAL ENVIRONMENT
	37210	0.979	0.929	0.688	0.992	0.615
	37207	0.975	1.000	0.538	0.996	0.673
	37208	0.971	0.892	0.775	0.988	0.540
	37217	0.963	0.996	0.396	0.963	0.735
	37211	0.958	0.938	0.413	0.954	0.746
	37013	0.921	0.967	0.225	0.979	0.792
	37203	0.892	0.821	0.529	0.983	0.554
	37218	0.888	0.942	0.663	0.975	0.281
	37115	0.842	0.817	0.304	1.000	0.690
	37209	0.760	0.863	0.285	0.971	0.429
	37206	0.721	0.950	0.350	0.967	0.204
	37076	0.675	0.779	0.129	0.942	0.504
	37189	0.565	0.858	0.196	0.571	0.513
	37228	0.525	0.354	0.488	0.600	0.629
	37214	0.513	0.771	0.021	0.925	0.325
	37216	0.479	0.708	0.148	0.879	0.258
	37212	0.467	0.413	0.217	0.621	0.704
	37221	0.329	0.650	0.038	0.763	0.196
	37204	0.248	0.463	0.083	0.546	0.338
	37138	0.238	0.400	0.100	0.783	0.133
	37080	0.233	0.496	0.454	0.254	0.208
	37205	0.219	0.375	0.108	0.725	0.175
	37215	0.042	0.504	0.046	0.192	0.158
	37220	0.025	0.196	0.067	0.421	0.067
CLARKSVILLE	ZIP CODE	MENTAL WELL-BEING INDEX	US SOCIETAL PROBLEMS	ECONOMIC STATUS	BASIC NEEDS	PHYSICAL ENVIRONMENT
	37040	0.85	0.95	0.30	0.92	0.65
	37042	0.90	0.93	0.19	0.95	0.84
	37043	0.12	0.52	0.03	0.43	0.19
	42223	0.52	0.61	0.17	0.65	0.63
MURFREESBORO	ZIP CODE	MENTAL WELL-BEING INDEX	US SOCIETAL PROBLEMS	ECONOMIC STATUS	BASIC NEEDS	PHYSICAL ENVIRONMENT
	37127	0.73	0.81	0.13	0.75	0.80
	37128	0.41	0.57	0.05	0.79	0.44
	37129	0.17	0.64	0.03	0.38	0.18
	37130	0.87	0.84	0.40	0.87	0.73
	37085	0.12	0.10	0.21	0.17	0.69
	37132	0.73	0.31	0.68	0.62	0.90

TABLE 05

Scores by County

COUNTY	MENTAL WELL-BEING INDEX	US SOCIETAL PROBLEMS	ECONOMIC STATUS	BASIC NEEDS	PHYSICAL ENVIRONMENT
Perry County, TN	1.000	0.537	1.000	0.756	1.000
Grundy County, TN	0.976	0.732	0.902	0.927	0.707
Wayne County, TN	0.951	0.659	0.854	0.732	0.976
Bedford County, TN	0.927	0.805	0.366	0.976	0.878
Lawrence County, TN	0.902	0.854	0.829	0.659	0.659
White County, TN	0.878	0.927	0.976	0.854	0.220
Lewis County, TN	0.854	0.951	0.634	1.000	0.171
Davidson County, TN	0.829	0.707	0.122	0.951	0.927
Overton County, TN	0.805	0.829	0.878	0.610	0.341
Macon County, TN	0.768	0.610	0.659	0.634	0.683
Montgomery County, TN	0.768	0.683	0.171	0.902	0.829
Hickman County, TN	0.732	0.463	0.683	0.463	0.951
Lincoln County, TN	0.707	0.366	0.439	0.829	0.902
Sequatchie County, TN	0.683	0.878	0.488	0.878	0.244
Warren County, TN	0.659	0.976	0.610	0.488	0.390
DeKalb County, TN	0.634	0.780	0.780	0.683	0.195
Clay County, TN	0.610	0.585	0.756	0.341	0.610
Jackson County, TN	0.585	0.317	0.951	0.195	0.780
Van Buren County, TN	0.561	0.146	0.805	0.366	0.756
Fentress County, TN	0.537	0.902	0.707	0.098	0.293
Giles County, TN	0.512	0.561	0.463	0.122	0.805
Stewart County, TN	0.488	0.415	0.512	0.268	0.732
Cannon County, TN	0.463	0.634	0.561	0.585	0.122
Houston County, TN	0.439	0.293	0.927	0.171	0.488
Marshall County, TN	0.415	0.756	0.244	0.293	0.537
Franklin County, TN	0.378	0.390	0.390	0.561	0.439
Pickett County, TN	0.378	1.000	0.732	0.024	0.024
Humphreys County, TN	0.341	0.220	0.537	0.390	0.512
Sumner County, TN	0.317	0.073	0.146	0.780	0.634
Rutherford County, TN	0.293	0.244	0.049	0.415	0.854
Dickson County, TN	0.268	0.341	0.293	0.439	0.463
Putnam County, TN	0.244	0.439	0.268	0.707	0.073
Coffee County, TN	0.220	0.488	0.317	0.244	0.415
Maury County, TN	0.195	0.195	0.098	0.512	0.585
Robertson County, TN	0.159	0.512	0.341	0.146	0.268
Wilson County, TN	0.159	0.098	0.073	0.537	0.561
Smith County, TN	0.110	0.268	0.585	0.220	0.098
Trousdale County, TN	0.110	0.122	0.195	0.805	0.049
Moore County, TN	0.073	0.049	0.415	0.317	0.146
Cheatham County, TN	0.049	0.171	0.220	0.049	0.317
Williamson County, TN	0.024	0.024	0.024	0.073	0.366

ENDNOTES

- 1 CDC Pulse Survey (2023-07-10)
- 2 National Center for Health Statistics. U.S. Census Bureau, Household Pulse Survey, 2020–2023. Anxiety and Depression. Generated interactively: Retrieved July 20, 2023 from <https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm>.
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- 4 Mental Health America. (October 2021). *The State of Mental Health in America*, 2022. <https://mhanational.org/research-reports/2022-state-mental-health-america-report>.
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- 6 Mental Health America. (October 2021). *The State of Mental Health in America*, 2022. <https://mhanational.org/research-reports/2022-state-mental-health-america-report>.
- 7 CDC Pulse Survey (2023-07-10)
- 8 CDC Pulse Survey (2023-07-10)
- 9 CDC Pulse Survey (2023-07-10)
- 10 *The Social Determinants of Mental Health*. Eds Michael T. Compton and Ruth S. Shim. American Psychiatric Publishing (2015).
- 11 Map created using mySidewalk (<https://www.mysidewalk.com/>) and Belmont Data Collaborative mental health index. See Appendix Table 1 for data sources informing BDC’s mental health index.
- 12 We have defined a rural county as one whose population density is less than 250 people per square mile and whose largest population center has a population of less than 50,000.
- 13 Map created using mySidewalk (<https://www.mysidewalk.com/>) and Belmont Data Collaborative Mental Well-Being Index. See Appendix Table 1 for data sources informing BDC’s mental health index.
- 14 Map created using mySidewalk (<https://www.mysidewalk.com/>) and Belmont Data Collaborative mental health index. See Appendix Table 1 for data sources informing BDC’s mental health index.
- 15 Map created using mySidewalk (<https://www.mysidewalk.com/>) and Belmont Data Collaborative mental health index. See Appendix Table 1 for data sources informing BDC’s mental health index.
- 16 Belmont Data Collaborative mental health index. See Appendix Table 1 for data sources informing BDC’s mental health index.



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