Duke | CLERGY HEALTH INITIATIVE

CLERGY HEALTH TRENDS

Findings from the Statewide Clergy Health Survey of North Carolina United Methodist Clergy, 2008-2021

VOLUME 1: PHYSICAL HEALTH

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The Mission

The Duke Clergy Health Initiative (CHI) identifies, tests, and promotes evidence-based practices to support the health and wellbeing of United Methodist clergy in North Carolina.

Study Overview

The United Methodist clergy of North Carolina have given each other and researchers a treasure trove of data on their physical, mental, and spiritual wellbeing. What started as a single, hour-long survey in 2008 has been repeated nearly every 2 years, providing 7 snapshots of clergy wellbeing across 13 years.

All United Methodist clergy with a current appointment, and many with a previous appointment, are invited to participate in the survey. The survey's measures include validated, standard health measures for comparison to non-clergy groups, as well as many other items tailored to clergy.

Clergy have responded to the survey at impressively high rates, even in 2021, such that we can be confident in the generalizability of the findings for United Methodist clergy in North Carolina. Besides the high response rate, we have been able to keep a large sample size over all waves of this study. This allows us to examine trends in clergy health against the backdrop of the general population to see if there are unique pathways or patterns among clergy and to identify points of potential intervention.

The longitudinal nature of this survey allows us to compare clergy to themselves over time. If we see changes across time in clergy health and wellbeing, they could be due to resources directed at clergy, new behaviors among clergy, or societal events (e.g., the COVID-19 pandemic). We are excited to share and compare pre-pandemic to 2021 clergy health data. Of course, other events have also been affecting United Methodist clergy, including political polarization and policies around sexual orientation. It is not possible to know with certainty what causes changes in clergy health and wellbeing between waves, but having many waves of data allows us to know that something influential changed.

A five-year grant was awarded by The Duke Endowment to continue assessing clergy wellbeing with this survey for an additional five years. By the end of that grant cycle, we will have 9 time points and over 13,000 surveys across 17 years (2008-2025).

TABLE 1 Response rates and sample size by survey year

Survey Year	Sample Size	Response Rate
2008	1,726	95.0%
2010	1,749	87.1%
2012	1,777	81.3%
2014	1,788	75.1%
2016	1,802	72.7%
2019	1,454*	72.6%
2021	1,460*	72.2%

* *The smaller sample sizes starting in 2019 are because we changed to limit the survey to those currently under appointment or having been retired 4 years or fewer.*

Compared to other survey studies, the response rates of the Statewide Clergy Health Survey have remained enviously high over the years.

Surveys are given to all currently appointed United Methodist Church clergy in North Carolina. Using ID numbers, we are able to follow individual clergy across the years to see changes in health and wellbeing over time.

Benchmarks

In the current report, we use Clergy Health Initiative data of North Carolina UMC (NC-UMC) clergy from 2008, 2010, 2012, 2014, 2016, 2019 and 2021. Across the survey items, we compare 2019 data to 2021 data. For some items, we also describe significant changes between an earlier wave of data and 2021.

When the data are available, we compare this NC-UMC clergy data to two other sources:

1) National UMC clergy data (US-UMC). The UMC benefits provider—Wespath Benefits & Investments—conducts a health survey on a demographically representative sample of US-based United Methodist clergy. In 2021, the US-UMC clergy survey invited a random sample of 4,000 clergy and had a response rate of 28%. While 28% is typical of many online surveys and does not definitely indicate response bias (Groves, 2006), a higher response rate would provide more confidence. The survey covers physical, mental, social, and financial wellbeing, using many of the same items that the Clergy Health Initiative uses because we were consulted in its construction.

The US-UMC data is only shown using whole numbers because that is the way their findings were provided to us. For comparisons between prevalence rates of health diagnoses between NC-UMC clergy and US-UMC clergy, we conducted tests of proportions. For more details on Wespath's data, please access https://www.wespath.org/health-well-being/health-well-being-resources/clergy-congregational-resources/clergy-well-being-research

2) North Carolina General Population (NC-GEN) non-clergy data. The Behavioral Risk Factors Surveillance System (BRFSS) is a survey sponsored by the US Centers for Disease Control and Prevention (CDC) and conducted by each state. The survey includes information on chronic health conditions and behaviors related to health risks, prevention, and health care access. This data is openly available. We accessed the 2021 survey data for North Carolina (response rate = 44%). For comparisons of health diagnosis prevalence rates between NC-UMC clergy and the general North Carolina population, we estimated predicted probabilities from logistic regressions, adjusting for differences in age, sex, and race across the NC-UMC and BRFSS datasets.

To access the Behavioral Risk Factors Surveillance System (BRFSS), please check the official website at https://www.cdc.gov/brfss/brfssprevalence/

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Clergy Health Trends

Findings from the Statewide Clergy Health Survey of North Carolina United Methodist Clergy, 2008-2021

Executive Summary

Our research from the 2008 Statewide Clergy Health Survey sounded the alarm that all was not well with the physical health of United Methodist Church (UMC) clergy in North Carolina (NC) (Proeschold-Bell, & LeGrand, 2010). Compared to demographically similar North Carolinians, UMC clergy in the state had significantly higher rates of diabetes, arthritis, hypertension, angina, and asthma. These above-average rates of chronic diseases were surprising at the time, given demography studies of clergy for four centuries up through 1959 that showed better health for clergy. During that time, clergy lived longer due to fewer accidents, suicides, and infectious diseases. However, it seems that UMC clergy in NC were ahead of their time in succumbing to chronic diseases driven by the obesity and stress that increasingly plague Americans (Proeschold-Bell & McDevitt, 2012).

Because we have continued the Statewide Clergy Health Survey approximately every two years from 2008-2021, we are able to answer the following key set of questions: how has clergy wellbeing changed from 2008 to 2021 in areas of physical health, mental health, and spiritual well-being? We answer those questions in separate volumes." Then delete the first sentence of the next paragraph.

In separate volumes, we answer those questions. In this current Executive Summary, we address:

1. How has the physical health of clergy changed from 2008 to 2021?
2. As of Fall 2021, do UMC clergy in NC still have worse rates of chronic diseases compared to the population?

1. *How has the physical health of clergy changed from 2008 to 2021? (See Table 1)*

   The rates of several chronic diseases and cardiovascular disease risk factors among NC-UMC clergy evidenced statistically significant increases from 2008-2014, including high cholesterol, hypertension, and heart attacks (i.e., myocardial infarction). However, these chronic diseases stabilized between 2014 and 2019, with the exception of high cholesterol whose prevalence decreased and diabetes whose prevalence increased. The prevalence of all chronic diseases that we measure remained stable between 2019 and 2021.

   Comparing the NC-UMC clergy obesity prevalence from 2008 to 2021, there was a statistically significant increase from 41% to 45%. However, across any two-year period (e.g., from 2019 to 2021), the increase was not statistically significant. In contrast, the obesity prevalence has been climbing for people in the United States from 1999 to 2018 (Hales et al., 2020), making this relative stability in obesity for clergy good news.

2. *As of Fall 2021, do UMC clergy in NC still have worse prevalence of chronic diseases compared to the North Carolina population? (See Table 2)*

   When possible, we compared physical health for NC-UMC clergy to the US-UMC clergy population and the NC general population (NC-GEN). In 2021, NC-UMC clergy have statistically significantly higher prevalence of high cholesterol and stroke than US-UMC. Adjusting for differences in age, sex, and race between the NC-UMC clergy and the general NC population in 2021, NC-UMC clergy have statistically significantly higher prevalence of asthma, high cholesterol, and obesity. Not all levels of obesity confer the same degree of health risks; class 3 obesity is related to coronary heart disease, stroke, some types of cancer, mental illness such as depression and anxiety, and elevated mortality risk (Bhaskaran et al., 2014; Luppino et al., 2010; Kitaharae et al., 2014; Powell et al., 2021), so we examined it separately. The probability of obesity class 3 among NC-UMC clergy (9.5%) is statistically significantly higher than the general NC population (5.7%), accounting for age, sex, and race.

In sum

Overall, we remain concerned about the rates of obesity, particularly class 3 obesity, asthma and high cholesterol for NC-UMC clergy. At the same time, we are heartened by the stability between 2014 and 2021 across a number of chronic diseases, including hypertension and musculoskeletal diseases like arthritis. However, even though the prevalence of some chronic diseases is not higher than the general population, the combined disease burden on clergy is still high. For example, in 2021, 34% of NC-UMC clergy reported having hypertension and 13% diabetes. Substantial efforts to improve physical health are needed to enhance quality of life and decrease the risk of cardiac events and the onset of new chronic diseases.

How has the physical health of clergy changed from 2008 to 2021?

TABLE 1 Aggregate-level trends over time among North Carolina UMC clergy with a current appointment

Health and wellbeing variable	Trend 2008 to 2014	Trend 2014 to 2019	Trend 2019 to 2021	2008 (or first year available) vs 2021	2021 NC-UMC clergy vs US-UMC clergy
Obesity	Stable	Stable	Stable	Increasing	Similar
Cholesterol	Increasing	Decreasing	Stable	Stable	Higher
Perceived overall health	Increasing	Decreasing	Stable	Increasing	Lower % "excellent/ very good"
Diabetes	Stable	Increasing	Stable	Stable	Similar
Musculoskeletal conditions *(arthritis, rheumatoid arthritis, gout, lupus and fibromyalgia)*	Decreasing	Stable	Stable	Decreasing	Similar
Asthma	Stable	Stable	Stable	Increasing	Similar
Hypertension	Increasing	Stable	Stable	Stable	Similar
Chronic obstructive pulmonary disease	Not available	Stable	Stable	Decreasing (2014 vs 2021)	Not available
Angina or coronary heart disease	Stable	Stable	Stable	Stable	Similar
Heart attack	Increasing	Stable	Stable	Stable	Similar
Stroke	Stable	Increasing	Stable	Stable	Higher

Note: *Red indicates worsening health and green indicates improving health.*

For findings in this table, our inclusion criteria were currently being appointed, which could mean being appointed in parish ministry or in extension ministry (broadly defined to include district superintendents and bishops), and that appointment could be full- or part-time. Our exclusion criteria were being fully retired, inactive, disabled, or on leave. The US-UMC clergy data are from the 2021 Wespath Benefits & Investments health survey.

Physical Health

Perceived Overall Health

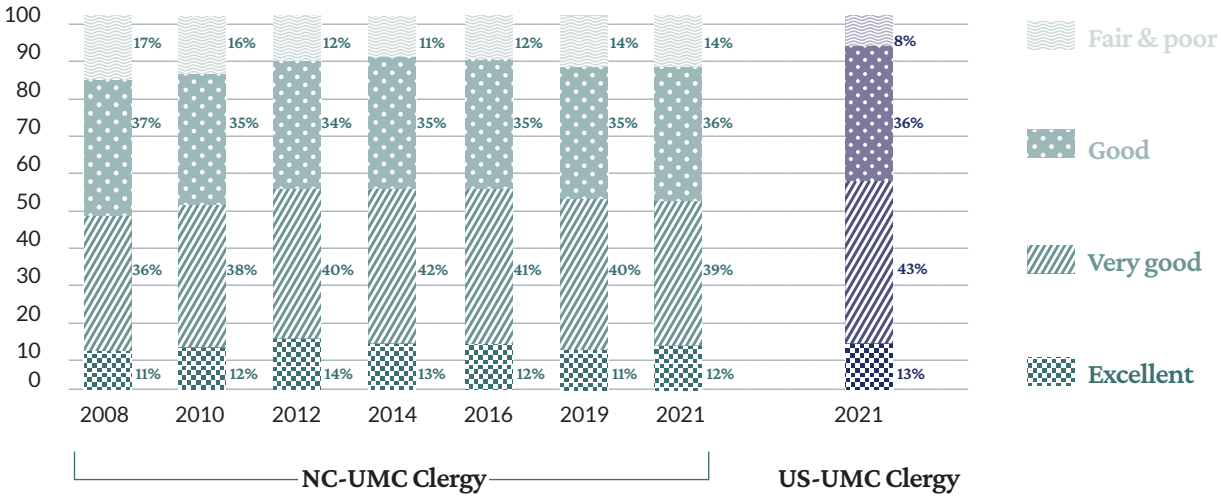
We asked clergy a common survey question: "In general, would you say your health is: excellent, very good, good, fair, or poor?" The percentage of NC-UMC clergy rating their overall health as fair or poor significantly decreased between 2008 and 2021. Perceived overall health stayed stable between 2019 to 2021.

Overall health rated as excellent, very good, and good

NC-UMC	US-UMC	NC-GEN
86.4%	92%	84.8%

Throughout this report, these boxes provide 2021 data

In general, would you say your health is...



- In 2021:
  - The percentage of NC-UMC clergy who indicated having excellent or very good overall health was significantly worse by 5 percentage points than the US-UMC clergy.

  - The predicted probability of NC-UMC clergy indicating 'excellent' perceived overall health is about 6 percentage points lower (worse) than among the North Carolina general population accounting for age, sex, and race (12.2% versus 18.4%, respectively).

  - Interestingly, the probability of NC-UMC clergy reporting their overall health as poor is lower (better) than among the general population in North Carolina (1.4% versus 4.1%, respectively).

- We do not know why NC-UMC clergy are less likely to perceive having poor health compared to the general NC population, while also being less likely to perceive having excellent health compared to the general NC population.

- Proeschold-Bell and LeGrand (2012) speculate that even though UMC clergy have higher rates of certain physical disease than the general population, they may not feel the limits of it as often because they have a sedentary job. On the other hand, it is possible that they do feel physical health struggles but work hard to push through them because they are motivated by their sacred calling.

- Alternatively, clergy might attribute their health outcomes to God. Shifting the responsibility for one's health outcomes away from the self and towards God has been suggested to enhance feelings of wellbeing by reinforcing the perception that God is in control (Koenig et al., 2012). It may also be that believing that God is in control causes clergy to be less health-focused. These ideas are both speculative.

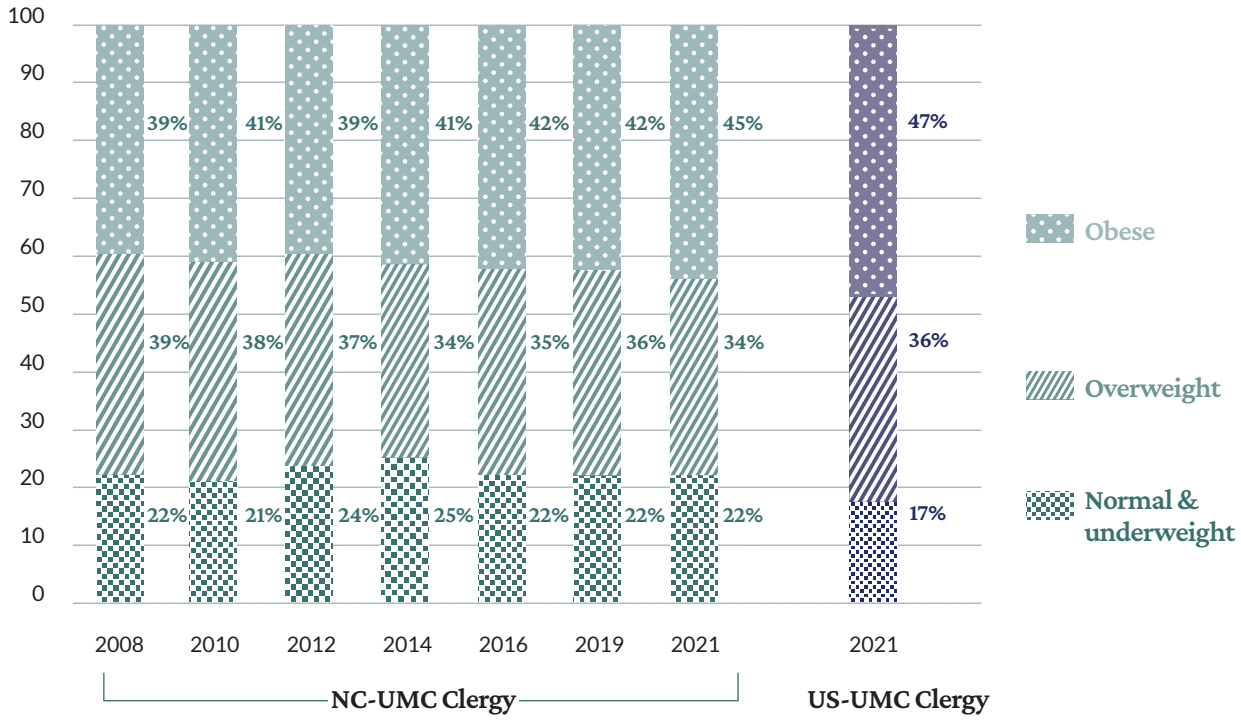
Weight

We calculated body mass index (BMI) using self-reported weight and height. Comparing NC-UMC clergy obesity rates from 2008 (41%) to 2021 (45%), there was a statistically significant increase. However, across any two-year period (e.g., from 2019 to 2021), the increase was not statistically significant.

Obesity calculated using self-reported weight and height

NC-UMC	US-UMC	NC-GEN
44.5%	47%	36.0%

Percentage of clergy qualifying for various Body Mass Index weight categories



- In 2021, the obesity rate among NC-UMC clergy was lower by two percentage points than US-UMC clergy, which was statistically significant.

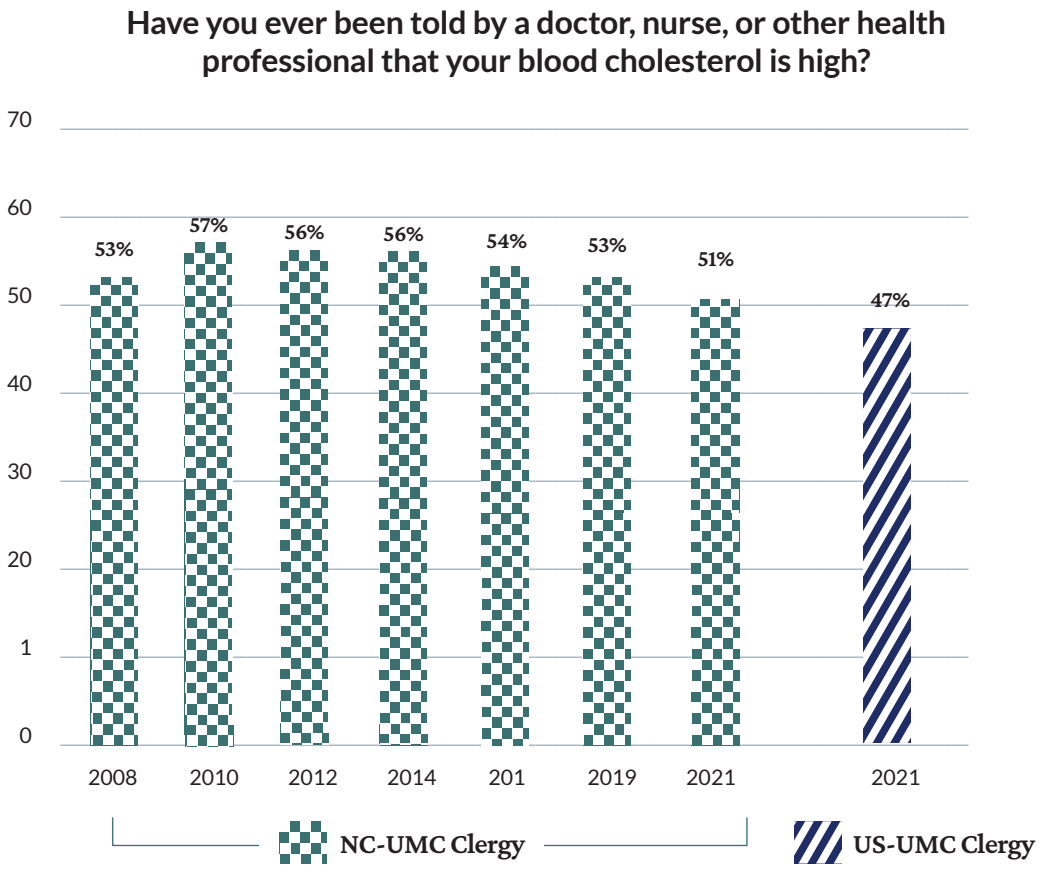
- In 2021, the predicted probability of obesity among NC-UMC clergy was about 10 percentage points higher than the NC general population, when accounting for age, sex, and race (45.3% versus 34.9%, respectively). We also find higher risks of obesity for NC-UMC clergy compared to the NC population, specifically among clergy ages 45-59, female clergy, and black clergy.

- In 2021, the probability of obesity class 3 among NC-UMC clergy was significantly higher compared to the general NC population (9.5% versus 5.7%, respectively, accounting for age, sex, and race). Class 3 obesity is described as Body Mass Index of 40 and greater and it is associated with higher odds of cardiovascular disease (de Rezende et al., 2016), diabetes (Kivimäki et al., 2017), cancer (Bhaskaran et al., 2014) and asthma (Barros et al., 2017).

Cholesterol

The percentage of NC-UMC clergy who have ever been told by a health professional that they have high cholesterol significantly decreased by 6 percentage points between 2010 and 2021. There was not a significant change between 2019 and 2021.

NC-UMC	US-UMC	NC-GEN
52.2%	47%	36.8%



- In 2021, the percentage of individuals who have ever been told by a health professional that they have high cholesterol was:

    - Five percentage points higher (worse) among NC-UMC than US-UMC clergy.

    - Higher (worse) by 11 percentage points among NC-UMC clergy than the NC general population (predicted probabilities of 51.5% and 40.0%, respectively, adjusting for age, gender, and race).

    - Hospital and other pastoral visits are often done by car and in the evenings, leading to fast food consumption. Consumption of fast food with limited time for physical activity have been identified as risk factors for clergy health. (Halaas, 2002).

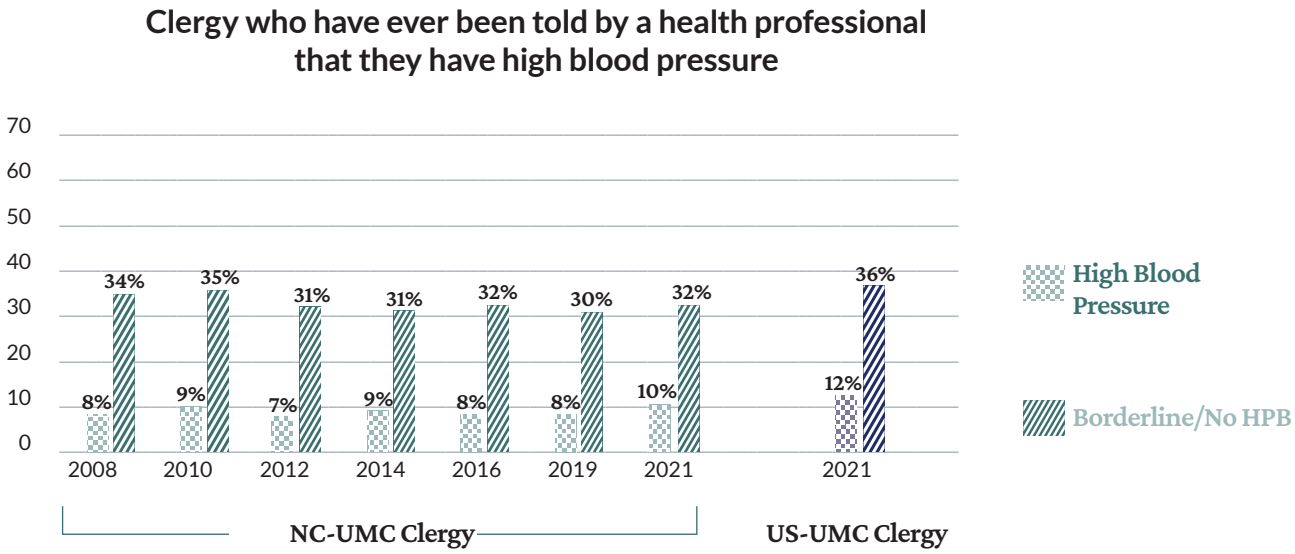
    - Healthy behaviors happen in a social context and interventions focused on individual behaviors are often not enough to promote sustainable change (Salgado, 2019). Healthy eating programs for clergy may need to go beyond targeting individual health behaviors and outcomes.

    - Wilcox et al. (2022) suggest implementing health promotion programs that target more comprehensive and structural changes, for example, developing organizational practices in the church and setting health policies and guidelines that contribute to the uptake and maintenance of healthy practices among both clergy and congregants.

High Blood Pressure

NC-UMC clergy who have ever been told by a health professional that they have high blood pressure (hypertension) was stable from 2008 to 2021 and from 2019 to 2021.

NC-UMC	US-UMC	NC-GEN
34.4%	36%	34.7%



Notes: HPB = High blood pressure
These percentages exclude female clergy who had high blood pressure during pregnancy only.

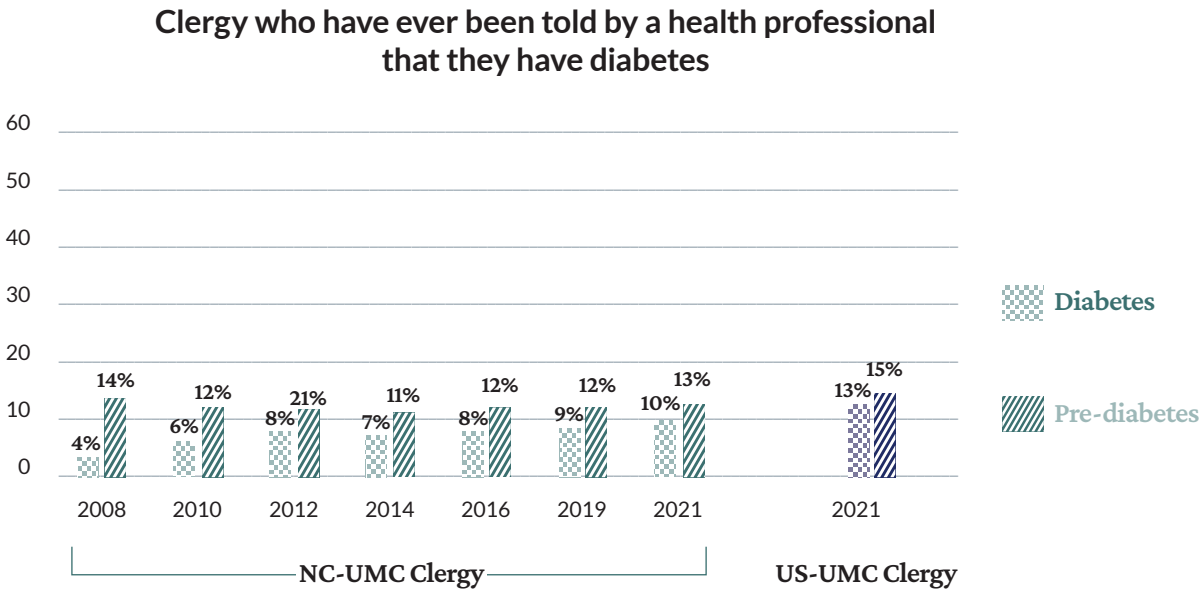
- In 2021, the percentage of NC-UMC clergy ever told by a health professional that they have high blood pressure was:
  - Not significantly different from US-UMC clergy.
  - Four percentage points lower (better) than the general NC population (predicted probabilities of 35.1% and 39.3%, respectively, adjusting for age, gender, and race).

Long work hours, obesity, and chronic psychological stress—all common among UMC clergy—are linked to high blood pressure and heart health (Rosenthal & Alter, 2012; American Heart Association, 2019).

Diabetes

The percentage of NC-UMC clergy who have ever been told by a health professional that they have diabetes decreased by less than 1 percentage point between 2008 and 2021, and it was not statistically significant. There was not a statistically significant change from 2019 to 2021 either.

NC-UMC	US-UMC	NC-GEN
13.4%	15%	12.7%



Note: These percentages exclude female clergy who had diabetes during pregnancy only.

- In 2021, the percentage of NC-UMC clergy ever told by a health professional that they have diabetes was:
  - Not significantly different from US-UMC clergy. **US-UMC**
  - Not significantly different from the NC general population. **NC-GEN**

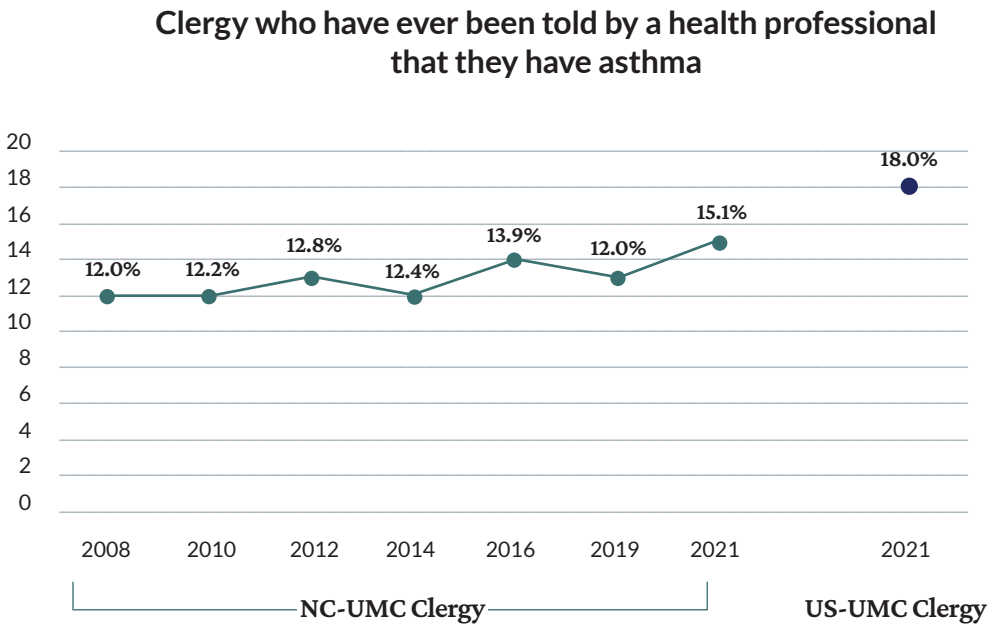
Bariatric Surgery

In 2021 and most waves from 2012 to 2019, 2% of NC-UMC clergy reported having had bariatric surgery. The percentage of the US general population having had this procedure did not surpass 1% (American Society for Metabolic and Bariatric Surgery, 2022). This difference is likely to be related to a greater number of NC-UMC clergy having access to health insurance, along with having higher rates of obesity.

Asthma

Asthma rates in NC-UMC clergy significantly increased by 3 percentage points between 2008 and 2021. There was not a significant change between 2019 and 2021.

NC-UMC	US-UMC	NC-GEN
15.1%	18%	13.7%



- The percentage of NC-UMC clergy ever been told by a health professional that they have asthma in 2021 was:

    - Significantly lower (better) by 3 percentage points than US-UMC clergy.

    - Higher (worse) than the NC general population by approximately 4 percentage points (predicted probabilities of 16.5% and 12.6%*, respectively), with significantly higher rates also among clergy women and Black clergy.

      The difference between NC-UMC clergy and the NC general population in ever being told by a health professional that they have asthma was 4 percentage points higher, even after adjusting for smoking and health insurance status.

      This difference could be associated with the higher rate of obesity among NC-UMC clergy. Obesity is considered a predisposing factor for the development of asthma, interfering with systemic inflammatory processes and increased prevalence of associated comorbid conditions (Boulet, 2013).

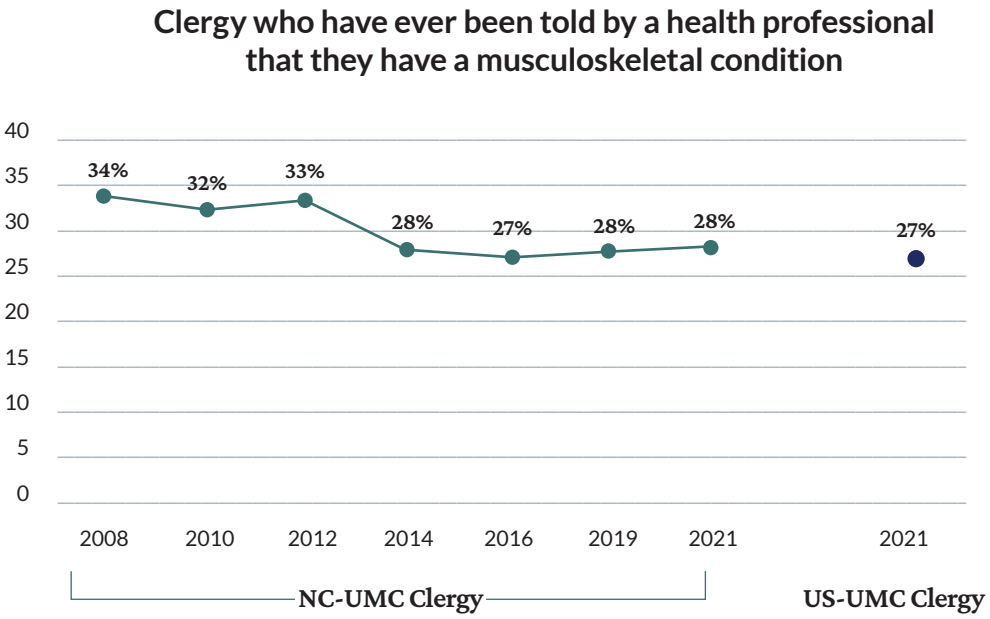
**Adjusting for age, gender, and race.*

Musculoskeletal Conditions

Arthritis, rheumatoid arthritis, gout, lupus or fibromyalgia

There was a significant decrease in the rate of musculoskeletal conditions between 2008 and 2021. However, when breaking down by age groups, there was a prevalence increase in musculoskeletal conditions among clergy between 35 to 44 years old from 2008 to 2021 (17% to 25%) and among those between 45 to 54 years old (31% to 42%). There was not a significant change between 2019 and 2021.

NC-UMC	US-UMC	NC-GEN
28.4%	27%	not available



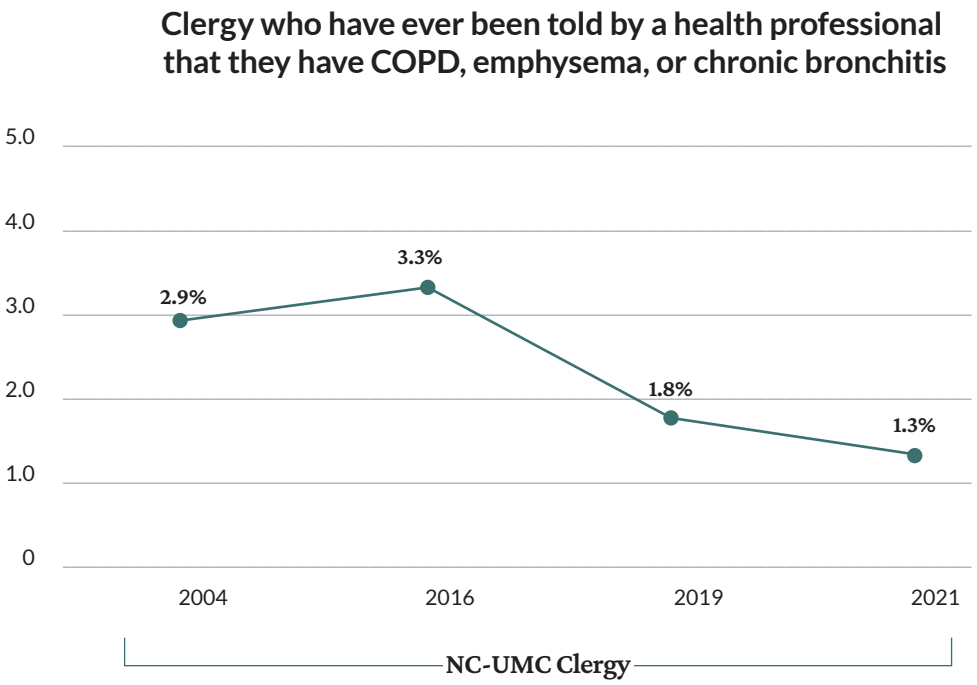
Note: The musculoskeletal condition data come from a single item that assesses the presence of arthritis, rheumatoid arthritis, gout, lupus and/or fibromyalgia.

- In 2021, the percentage of individuals who have ever been told by a health professional that they have a musculoskeletal condition was:
  - Similar between NC-UMC clergy and US-UMC clergy.
  - Similar between NC-UMC clergy and the general NC population.
- The prevalence decrease between 2008 and 2021 is related to a cohort effect. Participants aged 40-49 in 2008 had a significantly higher prevalence of musculoskeletal conditions (25%) than participants aged 40-49 in 2021 (10%). Note that these were different participants.

Chronic Obstructive Pulmonary Disease (COPD), Emphysema, or Chronic Bronchitis

The percentage of NC-UMC clergy who have ever been told by a health professional that they have chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis significantly decreased from 2014 to 2021.

NC-UMC	US-UMC	NC-GEN
1.3%	not available	7.6%



Note: The US-UMC clergy (2021) report does not show data on COPD, emphysema, or chronic bronchitis.

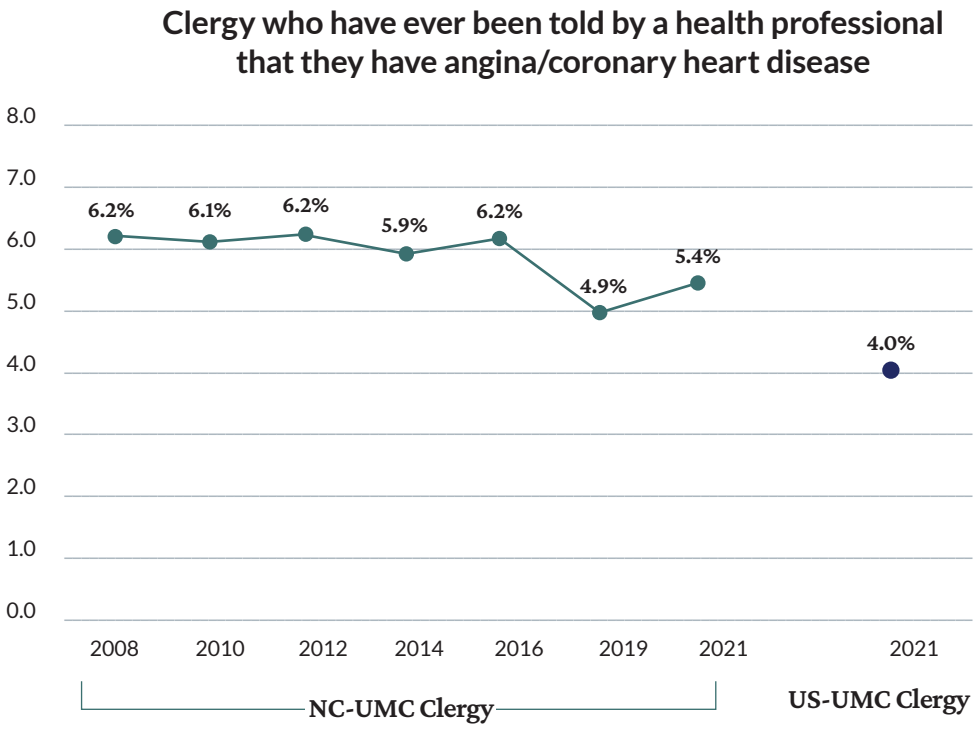
- In 2021, the percentage of individuals ever told that they have COPD or chronic bronchitis was more than 6 percentage points lower (better) among NC-UMC clergy than the NC general population (predicted probabilities of 1.3% vs 7.6%, respectively).

- The lower percentage of COPD among NC-UMC clergy is likely due in part to the low smoking rate among clergy. In 2021, 2.3% of NC-UMC clergy were current smokers, compared to 14.4% of the NC general population (BRFSS, 2021).

Angina/coronary heart disease

The percentage of NC-UMC clergy who have ever been told by a health professional that they have angina or coronary heart disease has remained stable over the years.

NC-UMC	US-UMC	NC-GEN
5.4%	4%	4.7%

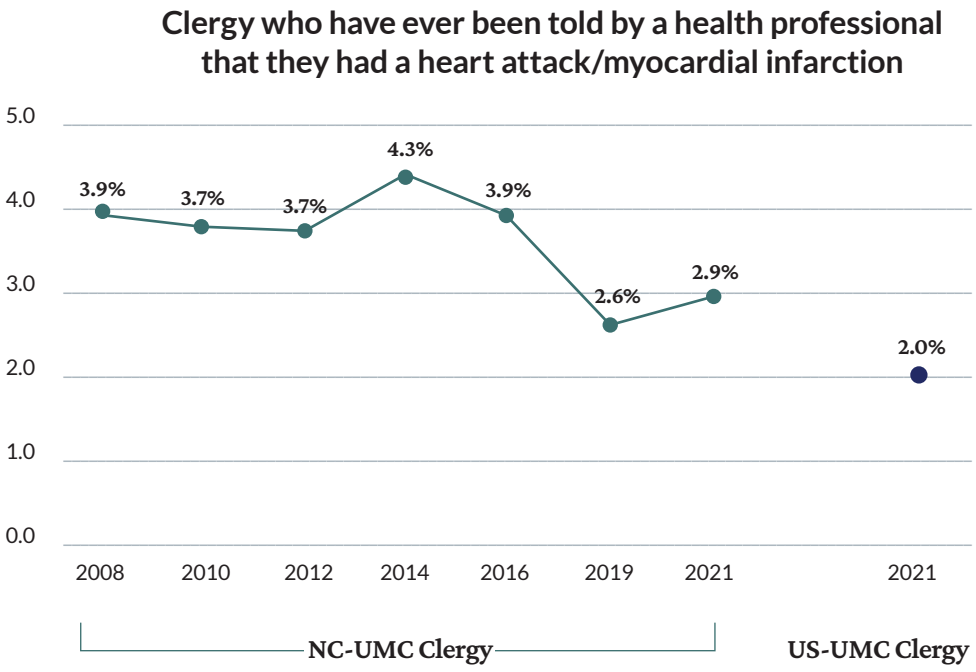


- In 2021, the percentage of individuals ever told by a health professional that they have angina or coronary heart disease was:
  - Not significantly different between NC-UMC clergy and US-UMC clergy.
  - Not significantly different between NC-UMC clergy and the NC general population.
- However, among NC-UMC clergy, the percentage of men who have experienced angina or coronary heart disease is significantly higher than that of women, by about 4 percentage points (7.3% and 3.5%, respectively).

Heart Attack / Myocardial Infarction

The percentage of NC-UMC clergy who have ever been told by a health professional that they have had a heart attack/ myocardial infarction was stable from 2008-2021.

NC-UMC	US-UMC	NC-GEN
2.9%	2%	4.6%



In 2021, the percentage of individuals ever told by a doctor or another health professional that they have had a heart attack was:

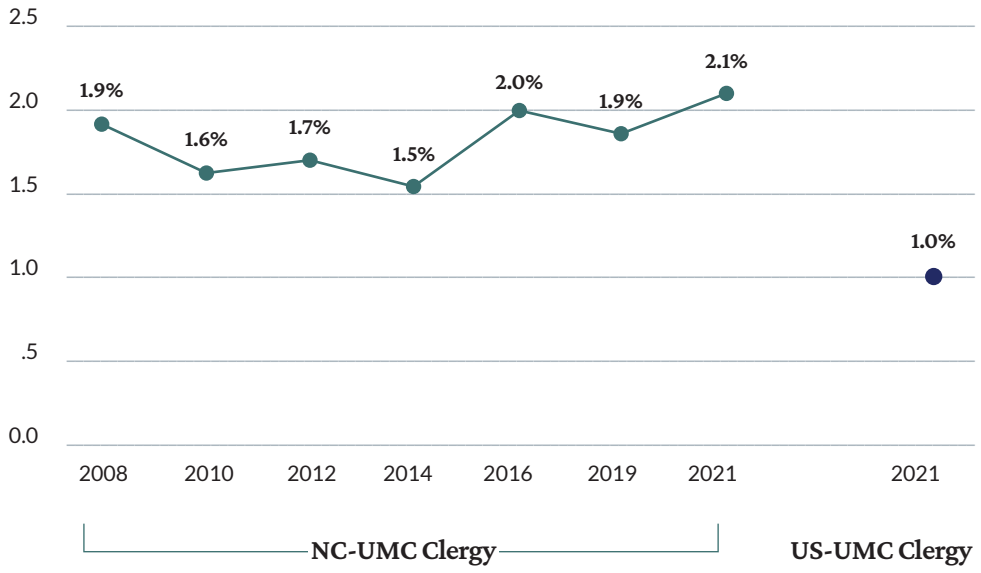
- Not significantly different between NC-UMC clergy and US-UMC clergy.
- Lower (better) by about 2 percentage points among NC-UMC clergy than the NC general population (predicted probabilities of 3.0% and 5.3%, respectively, adjusting for age, gender, and race).

Stroke

There were no significant changes observed across the years in the percentage rate of NC-UMC clergy having ever been told by a health professional that they have had a stroke.

NC-UMC	US-UMC	NC-GEN
2.1%	1%	4.3%

Clergy ever been told by a health professional that they have had a stroke



In 2021, the percentage of individuals ever told by a health professional that they have had a stroke was:

- Significantly higher (worse) by 1 percentage point among NC-UMC clergy compared to US-UMC clergy.

- Significantly lower (better) by about 2 percentage points among NC-UMC clergy than the NC general population (2.1% versus 4.3%, respectively).

Physical Health Discussion

UMC clergy in North Carolina continue to have a high burden of chronic disease. In many ways, this burden reflects the high rates of chronic disease experienced by people across the US. The prevalence of many of the chronic diseases we measured, specifically musculoskeletal conditions, asthma, hypertension, COPD, angina, and myocardial infarctions, stabilized for NC-UMC clergy between 2014 and 2021. This is good news, especially in light of how some prevalences were increasing between 2008 and 2014 and in light of national increases in obesity (Hales et al., 2020).

Despite this stability, in 2021, 27% of UMC clergy in NC had two or more chronic diseases among diabetes, musculoskeletal conditions (e.g., arthritis), asthma, hypertension, COPD, angina, and coronary heart disease, likely driven by obesity and exacerbated by chronic stress. The NC clergy obesity prevalence in 2021 was 45%, on par with the national UMC clergy obesity prevalence. Remarkably, the obesity prevalence of NC-UMC clergy has remained stable in recent years, while it has been trending up for the US population. Nevertheless, the probability of obesity class 3 among NC-UMC clergy (9.5%) is statistically significantly higher than the general NC population (5.7%), accounting for age, sex, and race.

It is important to continue to prevent new cases of clergy obesity. Further, supporting weight loss could improve overall health and even reverse health diagnoses. Weight loss of 5%—even if someone remains obese—is associated with noticeable health improvements in systolic and diastolic blood pressure, and, among people with type 2 diabetes, reductions in A1c (Jensen et al., 2013).

While there are many weight loss programs, we at the Duke Clergy Health Initiative rigorously studied Spirited Life, a combined set of program activities, which resulted in clinically meaningful weight loss among NC-UMC clergy (-1.75 kg on average for intervention participants compared to control participants sustained 24 months after the start of the intervention) (Proeschold-Bell et al., 2017). Weight loss was sustained for 18 months after the end of programming, and clergy with class 3 obesity (BMI ≥40) lost 7.2 kg more than non-participants at 18 months (Proeschold-Bell et al., 2020). The programming aspects of the Spirited Life study ran from 2011-2014. While it is difficult to recreate the full program, it is possible to engage in the 10-week online program once known as Naturally Slim. Naturally Slim is now called Wondr Health, which offers individual and group plans. www.wondrhealth.com

In Spirited Life, clergy benefited from health coaches who helped them set behavioral goals and engage in behavioral changes. While the Clergy Health Initiative no longer has health coaches, trained health coaches can be found here: https://www.diabetesfreenc.com/resources/resources-for-dpp-lifestyle-coaches/ through Diabetes Free NC. Diabetes Free NC is an evidence-based program associated with the Centers for Disease Control and Prevention (CDC) National Diabetes Prevention Program, which uses "Lifestyle Coaches" to address diabetes.

Studies have found that mindfulness-based stress reduction (MBSR) can lead to weight loss because it helps people become more mindful of what they are eating and to taste each bite, and also because by addressing stress, people are less likely to eat due to stress. The Clergy Health Initiative tested MBSR and found strong evidence that clergy faithfully practiced it and had benefits of reduced stress, anxiety, and depressive symptoms. Duke Integrative Medicine regularly offers distance learning MBSR (8 weekly sessions, 90 minutes each): https://dhwprograms.dukehealth.org/programs-training/public/mindfulness-based-stressed-reduction-distance-learning/

Besides MBSR, the Faith, Activity and Nutrition Program, developed alongside Black pastors and churches in South Carolina, offers an approach for the whole congregation. This program was broadly tested, including a recent study with 54 churches. The results show that this program motivates pastors to support the practices of physical activity and healthy eating among congregants which in turn leads to greater physical activity. https://www.cdc.gov/prc/study-findings/research-briefs/fan.html

When groups of people share a goal of better health and work together towards it, outcomes are better (Fishbein, 2009). When we conducted Spirited Life, touching the lives of two-thirds of the UMC clergy in NC, we often heard pastors asking each other about their progress, encouraging each other to continue, and celebrating each other's improvements. For this reason, if a concerted group effort is made to encourage health behavior change, perhaps throughout a UMC district, and many clergy join in – maybe even with family members and congregants – the ability to participate and sustain one's effort will increase.

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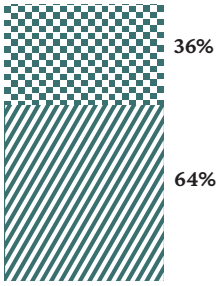
Appendix

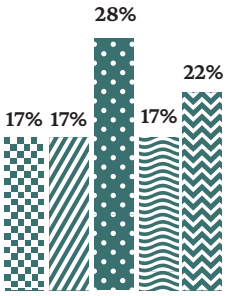
NC-UMC 2021 Demographics

Gender



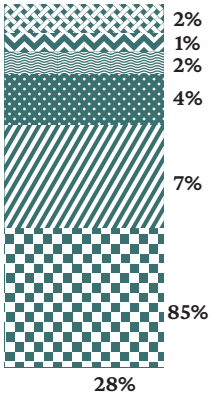
- Female
- Male

Age



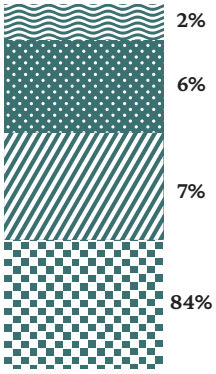
- < 40
- 40 to 49
- 50 to 59
- 60 to 64
- 65 or over

Race



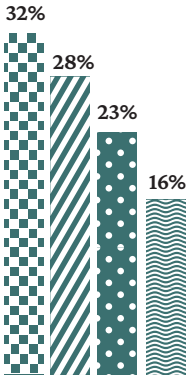
- Latinx
- Native
- Asian
- Bi- or multi-racial
- African-American
- White

Marital Status



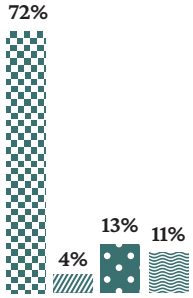
- Widow
- Never Married
- Divorced
- Married

Years in Ministry



- Up to 10 years
- 11 to 20 years
- 21 to 30 years
- More than 30 years

Appointment Type



- Full time
- 3/4 time
- 1/2 time
- 1/4 time

As of Fall 2021, do UMC clergy in NC still have worse prevalence of chronic diseases compared to the North Carolina population?

TABLE 2 North Carolina UMC clergy disease prevalence compared to reported population prevalence

Health condition	NC-UMC clergy vs US-UMC clergy*	NC-UMC clergy vs NC general population**
Physical health		
Obesity	2 percentage points lower	10 percentage points higher
Cholesterol	5 percentage points higher	11 percentage points higher
Perceived overall health being "very good" or "excellent"	5 percentage points lower	6 percentage points lower
Hypertension	Similar	4 percentage points lower
Diabetes	Similar	Similar
Musculoskeletal conditions (arthritis, rheumatoid arthritis, gout, lupus and fibromyalgia	Similar	Similar
COPD, emphysema, or chronic bronchitis	Not available	4 percentage points lower
Angina or coronary heart disease	Similar	Similar
Heart attack	Similar	2 percentage points lower
Stroke	1 percentage point higher	2 percentage points lower
Asthma	3 percentage points lower	4 percentage points higher

For findings in this table, we accessed the 2021 Behavioral Risk Factors Surveillance System (BRFSS) data for North Carolina. For comparisons of health diagnosis prevalence, we estimated predicted probabilities from logistic regressions, adjusting for differences in age, sex, and race across the NC-UMC and BRFSS datasets.

About the Duke Clergy Health Initiative

Ministry is a complex profession – full of purpose and meaning. However, the challenges of ministry, combined with the need to prioritize their sacred calling, can prevent pastors from tending to their own well-being. We believe congregations and communities flourish when pastors have permission and tools to foster their physical, emotional, and spiritual health. To that end, we identify, test, and promote evidence-based practices to support the well-being of clergy. Contact us at clergyhealth@div.duke.edu to learn more.

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