Duke | CLERGY HEALTH INITIATIVE

CLERGY HEALTH TRENDS

Findings from the Statewide Clergy Health Survey of North Carolina United Methodist Clergy, 2008-2023

PHYSICAL HEALTH

Duke Clergy Health Initiative
Duke University
clergywb@duke.edu
clergyreligionresearch.duke.edu/clergy-health-initiative-chi/
Funded by The Duke Endowment

Table of Contents

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.

Duke | CLERGY HEALTH INITIATIVE

Clergy Health Trends

Findings from the Statewide Clergy Health Survey of North Carolina United Methodist Clergy, 2008-2023

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 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 2008-2023, we are able to answer the following key set of questions: how has clergy wellbeing changed from 2008 to 2023 in areas of physical health, mental health, and spiritual wellbeing?

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 2023?
2. As of Fall 2021, do UMC clergy in NC still have worse rates of chronic diseases compared to North Carolinians in 2021?

1. *How has the physical health of clergy changed from 2008 to 2023? (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 2023.

   Comparing the NC-UMC clergy obesity prevalence from 2008 to 2023, there was a statistically significant increase from 40% to 46%. 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. Note: 2023 BRFSS data is not yet available so more up to date comparisons cannot be made.

2. *As of Fall 2021 do UMC clergy in NC still have worse prevalence of chronic diseases compared to the 2021 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 that of 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 2023 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 2023, 34% of NC-UMC clergy reported having hypertension and 12% 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 2023?

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	Trend 2021 to 2023
Obesity	Stable	Stable	Stable	Stable
Cholesterol	Increasing	Decreasing	Stable	Stable
Perceived overall health	Increasing	Decreasing	Stable	Stable
Diabetes	Stable	Increasing	Stable	Stable
Musculoskeletal conditions	Decreasing	Stable	Stable	Stable
Asthma	Stable	Stable	Stable	Stable
Hypertension	Increasing	Stable	Stable	Stable
Chronic obstructive pulmonary disease	Not available	Stable	Stable	Stable
Angina or coronary heart disease	Stable	Stable	Stable	Stable
Heart attack	Increasing	Stable	Stable	Stable
Stroke	Stable	Increasing	Stable	Stable

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, on leave, or from another conference. Clergy who withdrew or terminated their conference membership were excluded.

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 8 snapshots of clergy wellbeing across 15 years.

Clergy members of the North Carolina and Western North Carolina United Methodist Conferences under current appointment or within five years of their retirement 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 2023, 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 wellbeing practices among clergy, or societal events (e.g., the COVID-19 pandemic). We are excited to share and compare clergy health data after disaffiliation. 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.

The Clergy Health Initiative received an additional five-year grant from The Duke Endowment to continue tracking clergy health in 2023 and 2025. By 2025, we will have 9 time points and over 13,000 surveys across 17 years (2008-2025).

TABLE 1 Response rates and sample sizes by survey year

Survey Year	Sample Size	Response Rate
2008	1,725	94.8%
2010	1,749	87.1%
2012	1,776	81.2%
2014	1,787	75.1%
2016	1,802	72.7%
2019	1,454*	72.7%
2021	1,461*	72.2%
2023	1,080**	69.5%

* *The smaller samples sizes in 2019 and 2021 are due to changing the eligibility; starting in 2019 clergy must be currently under appointment or retired within the past 4 years.*

** *The smaller sample size in 2023 reflects changes in the United Methodist Church due to disaffiliation.*

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 UMC clergy members of the NC and WNC Conferences. Using ID numbers, we are able to follow individual clergy across the years to see individual and population-level health and wellbeing.

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, 2021, and 2023. Across the survey items, we compare 2021 data to 2023 data. For some items, we also describe significant changes between an earlier wave of data and 2023.

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 2023, the US-UMC clergy survey invited a random sample of 5,000 clergy and had a response rate of 25%. While 25% 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.

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/assets/1/7/5991.pdf.

2) North Carolina General Population (NC-GEN) non-clergy data. The Behavioral Risk Factor 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 = 45%). Note: As of September 18, 2024 the BRFSS data from 2021 has been disseminated. The 2022 data is missing some variables and the 2023 data is not available at all. For this reason, we are comparing our data collected in fall 2021 to the most recent full BRFSS dataset available (2021). 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/.

Physical Health

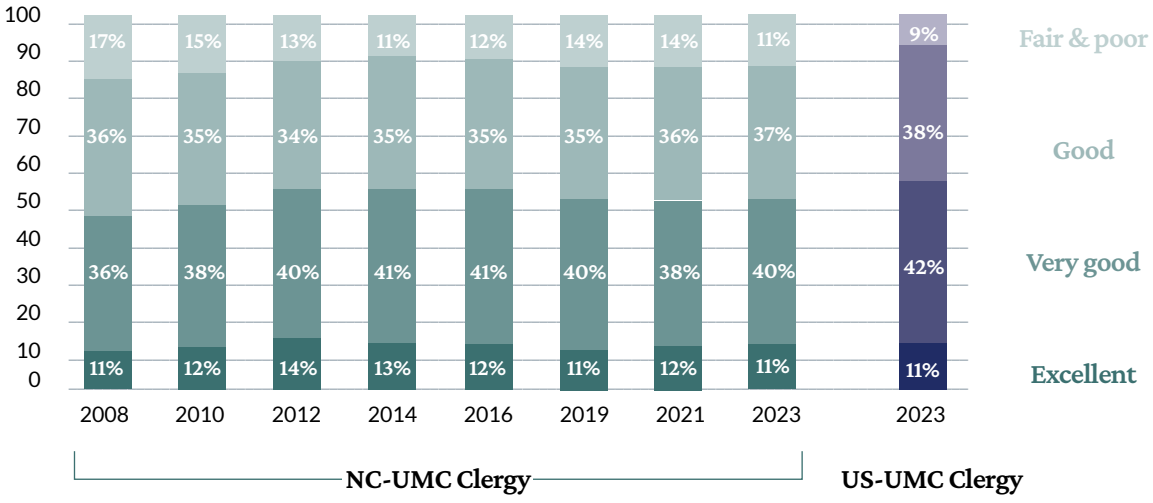
Perceived Overall Health

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 2023. Perceived overall health stayed stable between 2019 to 2023.

Overall health rated as excellent, very good, and good

2023 NC-UMC	2023 US-UMC	2021 NC-GEN	2021 NC-UMC
89.1%	90.7%	84.8%	86.4%

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



Across time, perceived overall health is improving for NC-UMC clergy.

- In 2023:
  - The percentage of NC-UMC clergy who indicated having excellent or very good overall health is 2 percentage points lower than the US-UMC clergy. This difference was not statistically significant.

- In 2021:
  - 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 diseases 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.

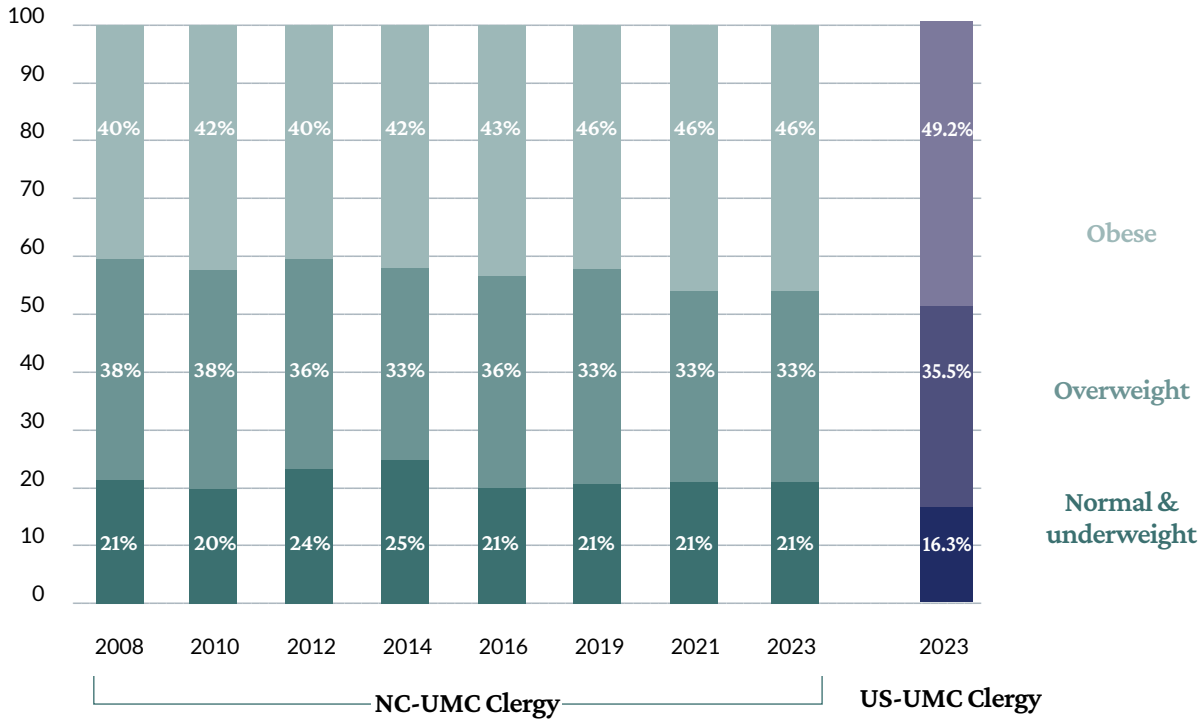
Weight

We calculated body mass index (BMI) using self-reported weight and height. Comparing NC-UMC clergy obesity rates from 2008 (40%) to 2023 (46%), there was a statistically significant increase. However, across any two-year period (e.g., from 2021 to 2023), the increase was not statistically significant.

Obesity calculated using self-reported weight and height

2023 NC-UMC	2023 US-UMC	2021 NC-GEN	2021 NC-UMC
45.8%	49.2%	34.1%	46.0%

Percentage of clergy qualifying for various Body Mass Index weight categories



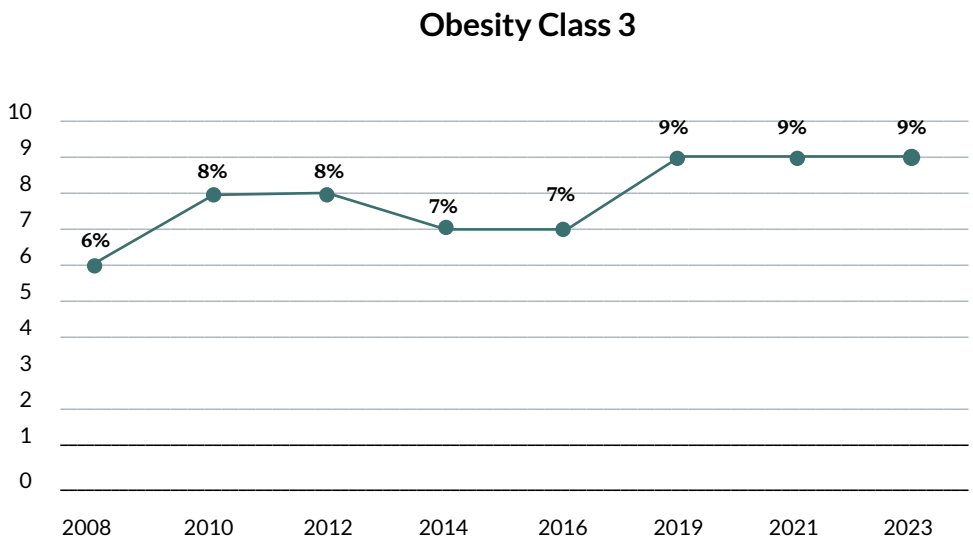
- In 2021, the obesity rate among NC-UMC clergy was lower by two percentage points than US-UMC clergy. In 2023, the obesity rate among NC-UMC was three percentage points lower than US-UMC clergy. The differences between NC-UMC and US-UMC clergy did not reach statistical significance in either year.

- 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 groups compared to the NC population, specifically among clergy ages 45-59, female clergy, and black clergy.

- Class 3 obesity is described as a 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).

- 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).

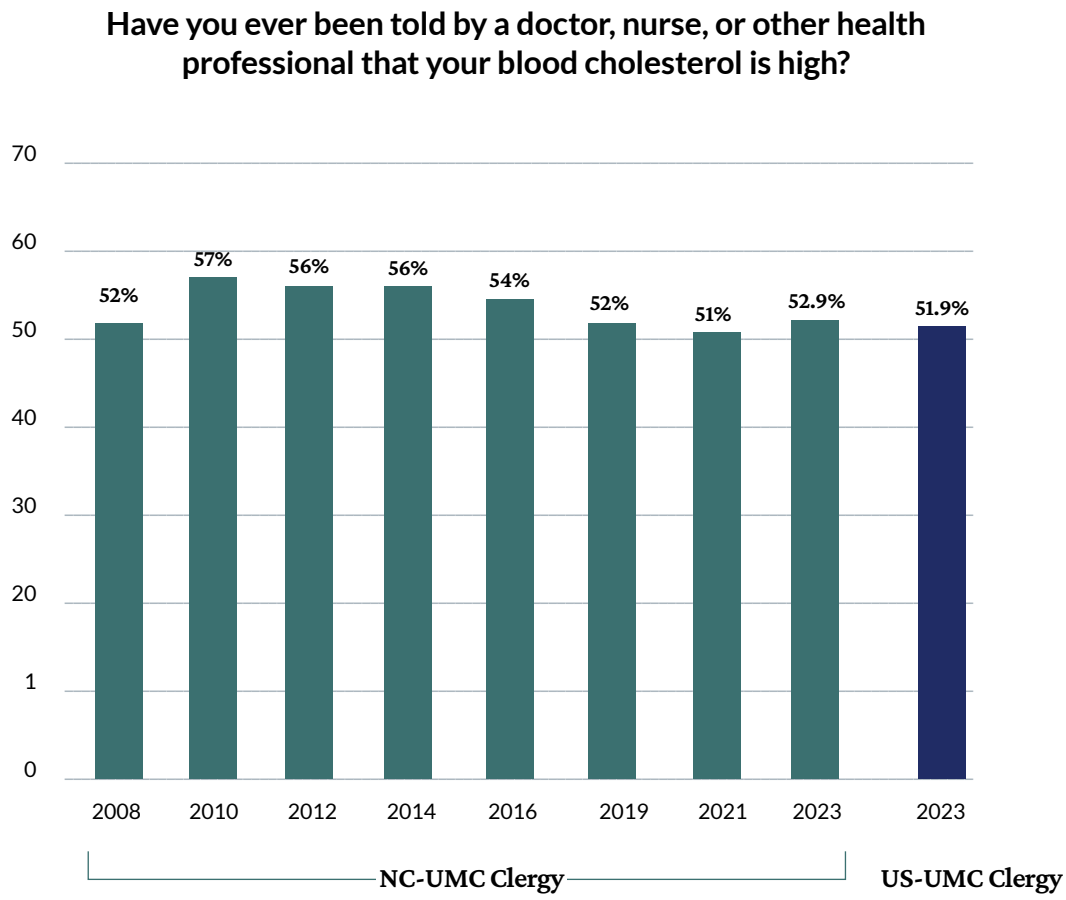
- Although the incidence of class 3 obesity remained steady from 2019 to 2023, a statistically significant rise was observed over the longer period from 2008 to 2023.



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 2023.

2023 NC-UMC	2023 US-UMC	2021 NC-GEN
52.9%	51.9%	36.8%



- In 2023, the percentage of individuals who have ever been told by a health professional that they have high cholesterol was one percentage point higher (worse) among NC-UMC than US-UMC clergy. 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. In 2023, NC-UMC were only 1 percentage point worse than their US-UMC colleagues, which was not statistically significant.

    - 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 and 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.

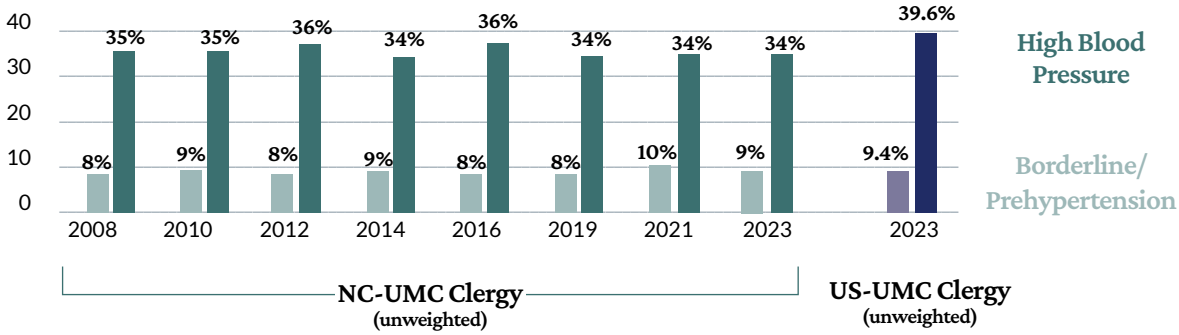
    - Wilcox et al. (2022) suggest implementing health promotion programs that target more comprehensive and structural changes, for example, developing organizational practices in the church and setting health policies and guidelines that contribute to the uptake and maintenance of healthy practices among 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 2023 and from 2019 to 2023.

2023 NC-UMC	2023 US-UMC	2021 NC-GEN	2021 NC-UMC
33.5%	39.6%	34.7%	34.0%

Clergy who have ever been told by a health professional that they have high blood pressure



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

- In 2023, the percentage of NC-UMC clergy ever told by a health professional they have high blood pressure was 6 percentage points lower (better) than US-UMC, which was statistically significant.

- 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.

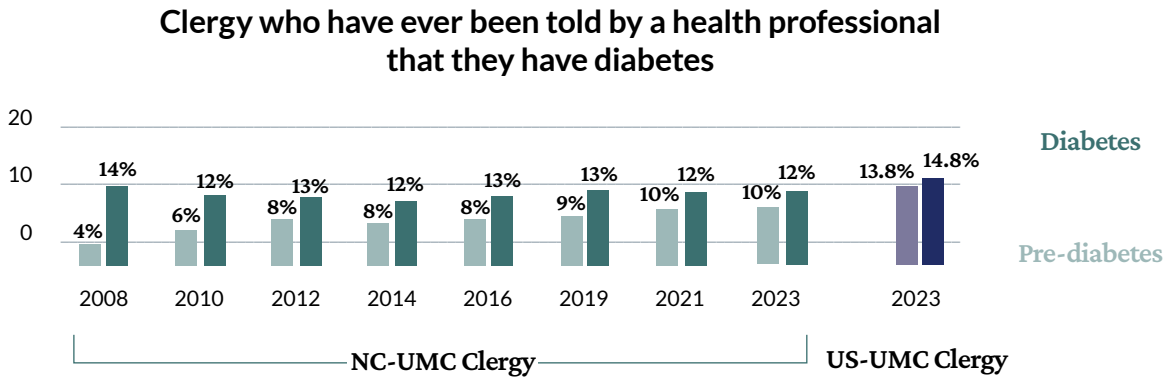
  - Four percentage points lower (better) than the general NC population (predicted probabilities of 35.1% and 39.3%, respectively, adjusting for age, gender, and race).

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 four percentage points between 2008 and 2023, and it was not statistically significant. There was not a statistically significant change from 2021 to 2023 either.

2023 NC-UMC	2023 US-UMC	2021 NC-GEN
12.1%	14.8%	12.1%



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

- In 2023, the percentage of NC-UMC clergy ever told by a health professional that they have diabetes decreased by 2 percentage points, but this was not a statistically significant change.

- 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.

  - Not significantly different from the NC general population.

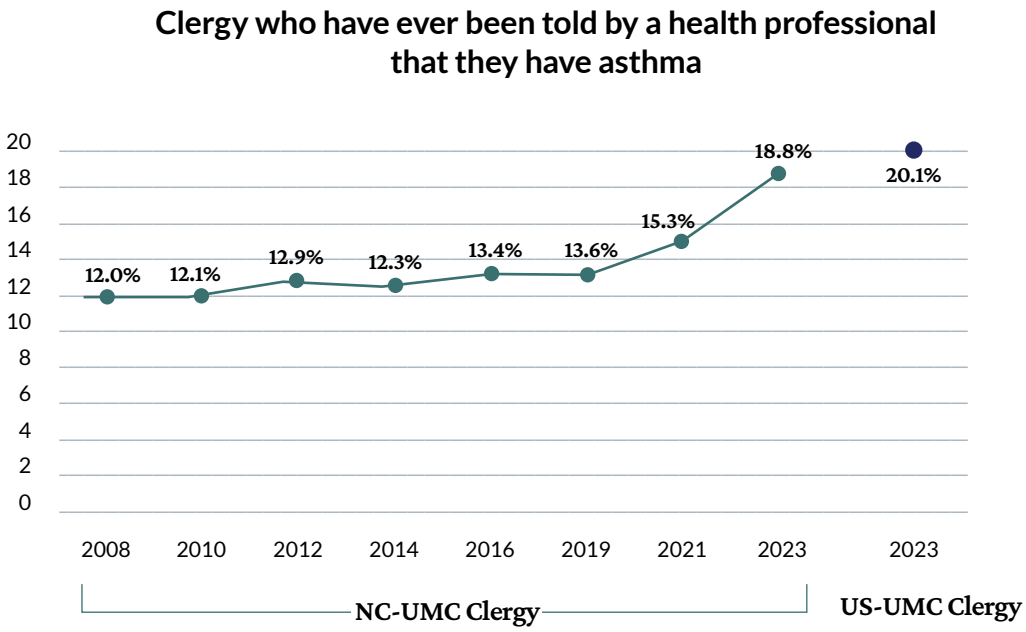
Bariatric Surgery

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. As responses to this variable have shown no significant variation over the years, we eliminated it from our survey starting in 2021 to optimize data collection.

Asthma

Asthma rates in NC-UMC clergy significantly increased by 7 percentage points between 2008 and 2023. There was not a significant change between 2019 and 2023.

2023 NC-UMC	2023 US-UMC	2021 NC-GEN	2021 NC-UMC
16.8%	20.1%	13.7%	15.3%



- 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).

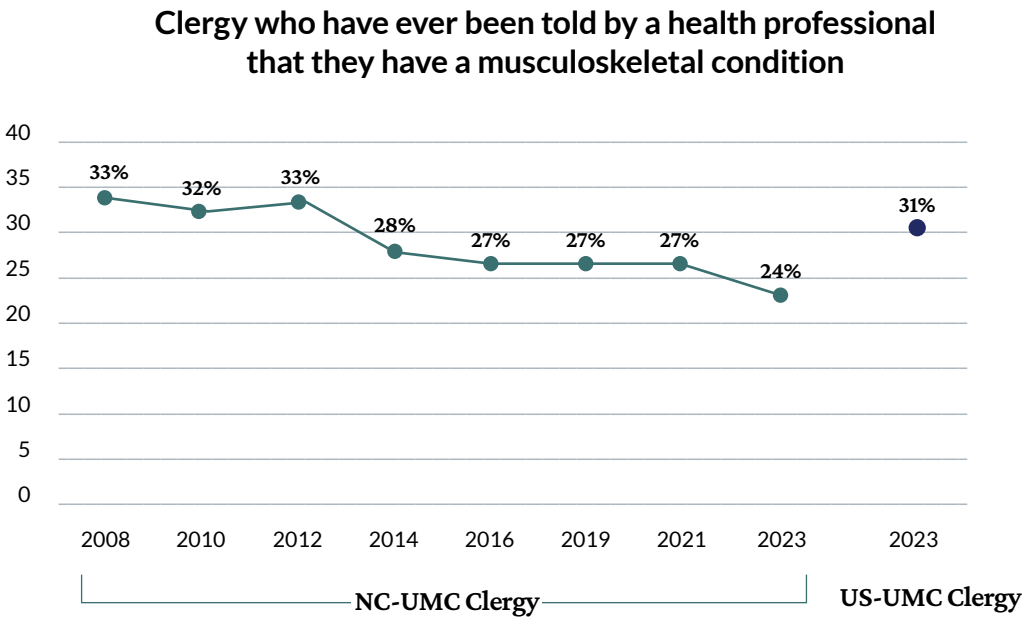
**Adjusting for age, gender, and race.*

Musculoskeletal Conditions

Arthritis, rheumatoid arthritis, gout, lupus or fibromyalgia

There was a significant decrease in the rate of musculoskeletal conditions between 2008 and 2023.

2023 NC-UMC	2023 US-UMC (weighted)	NC-GEN
24.3%	30.8%	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.

Between 2008 and 2023, a significant decline in musculoskeletal conditions was observed among clergy in two age groups:

- Those aged 35-44 years old saw a decrease from 17% to 6%.
- Those aged 45-54 years old saw a decrease from 31% to 14%.

Note that these changes reflect shifts in prevalence among different cohorts within each age group over time, rather than tracking the same individuals. Both declines are statistically significant.

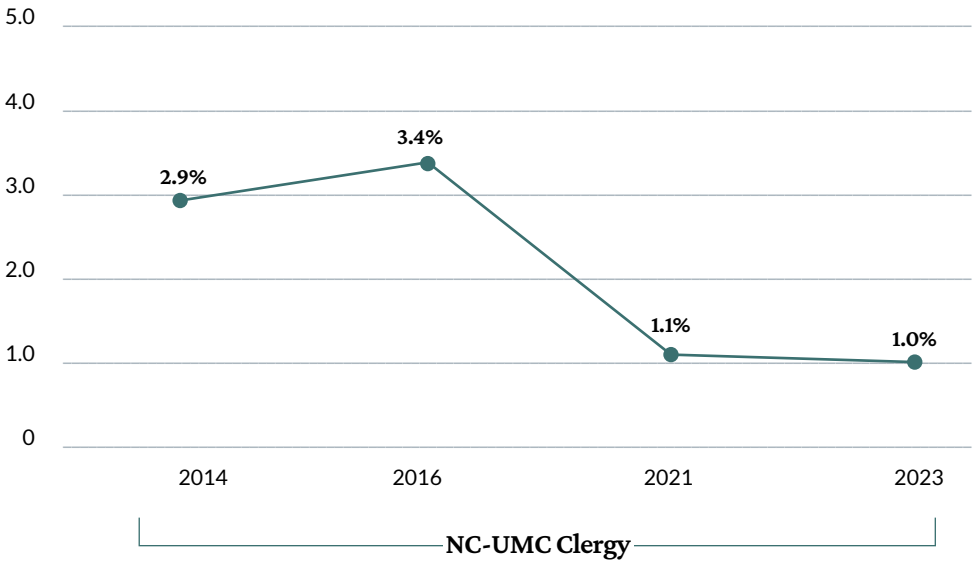
- In 2021, the percentage of individuals who have ever been told by a health professional that they have a musculoskeletal condition was:
    - Similar between NC-UMC clergy and US-UMC clergy.
    - Similar between NC-UMC clergy and the general NC population.

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 decreased from 2021 to 2023.

NC-UMC	US-UMC	NC-GEN
1.0%	**not available**	**7.6%** *This percentage is exactly the same in 2022.*

Clergy who have ever been told by a health professional that they have COPD, emphysema, or chronic bronchitis



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

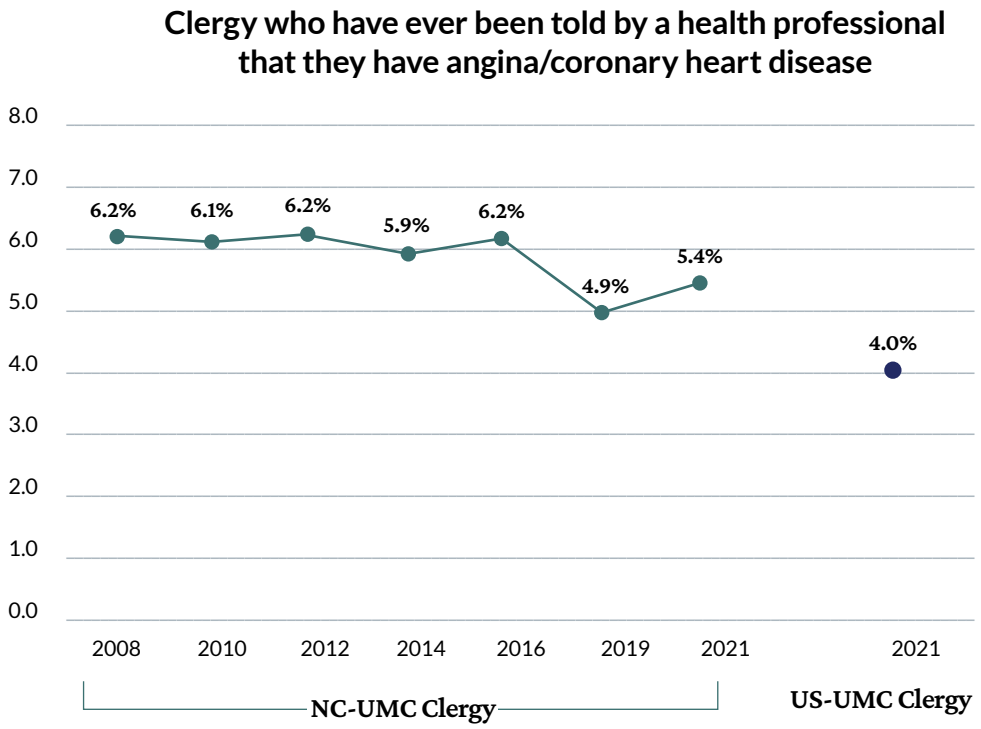
- In 2021, the percentage of individuals ever told that they have COPD or chronic bronchitis was more than 6 percentage points lower (better) among NC-UMC clergy than the NC general population (predicted probabilities of 1.3% vs 7.6%, respectively).

- 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 prevalence of angina among NC clergy has significantly decreased by 2.5 percentage points over time, representing a statistically significant decline.

2023 NC-UMC	US-UMC (weighted)	NC-GEN
3.7%	3.7%	5.0%

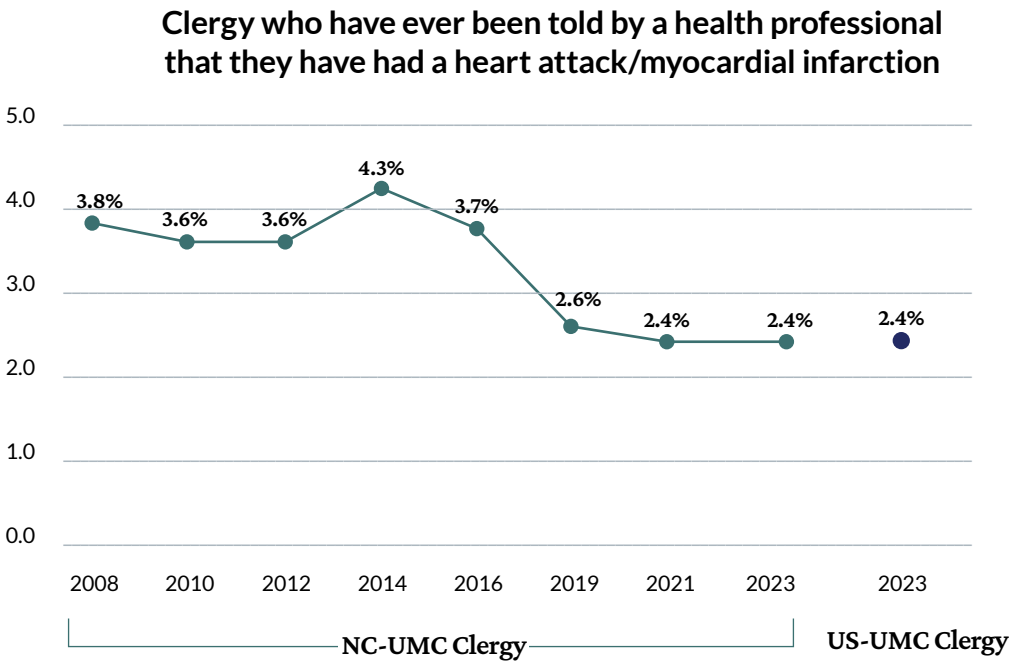


- In 2023, the percentage of NC-UMC clergy ever diagnosed with angina was not significantly different than US-UMC clergy.
- In 2021, the percentage of individuals ever told by a health professional that they have angina or coronary heart disease was:
  - Not significantly different between NC-UMC clergy and US-UMC clergy.
  - Not significantly different between NC-UMC clergy and the NC general population.

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 has declined significantly from 2008 to 2023.

2023 NC-UMC	2023 US-UMC (weighted)	NC-GEN
2.4%	2.6%	4.6%



In 2023, the percentage of NC-UMC clergy ever told by a health professional that they have had a heart attack is similar to the prevalence reported in 2021 and similar to US-UMC clergy.

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

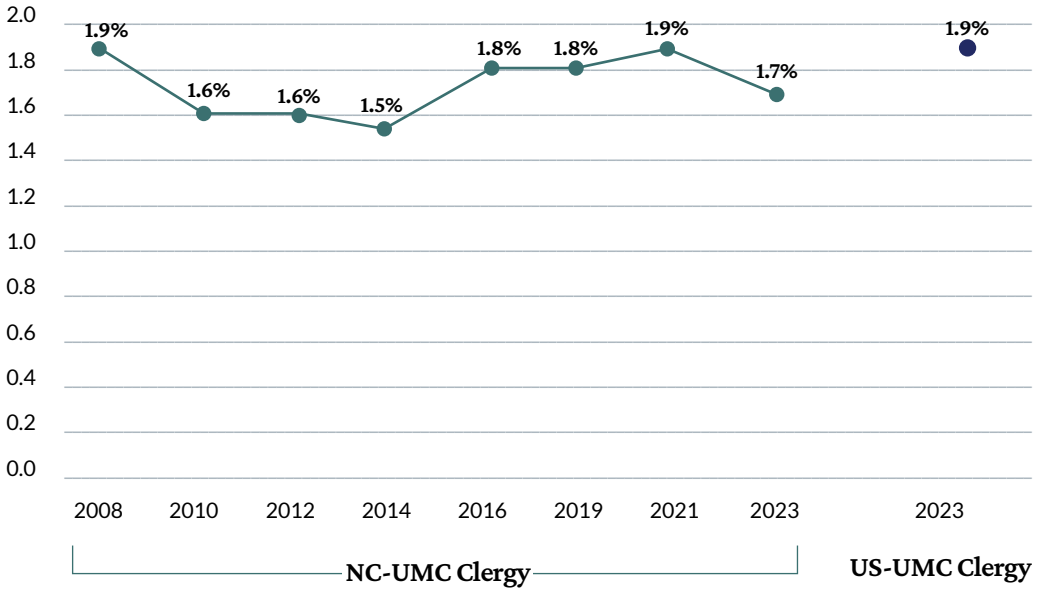
- Not significantly different between NC-UMC clergy and US-UMC clergy.
- Lower (better) by about 2 percentage points among NC-UMC clergy than the NC general population (predicted probabilities of 3.0% and 5.3%, respectively, adjusting for age, gender, and race).

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.

2023 NC-UMC	2023 US-UMC (weighted)	2021 NC-GEN	2021 NC-UMC
1.7%	1.9%	4.3	1.9

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 (1.9% versus 4.3%, respectively).

Physical Health Discussion

In 2008, we initially detected concerning rates of chronic diseases among clergy in North Carolina. Over the past 15 years, we have diligently monitored these trends. Unfortunately, United Methodist Church clergy in NC still face a disproportionately high burden of chronic disease, mirroring the nationwide epidemic of chronic conditions affecting the broader US population.

The prevalence of many of the chronic diseases we measured, specifically cholesterol, diabetes, hypertension and stroke, have remained stable since 2008.

Despite this stability, in 2023, 25% 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 2023 was 46%, 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.

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. Additionally, 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.

References

American Heart Association. (2019). Working too much could lead to high blood pressure. https://www.heart.org/en/news/2019/12/19/working-too-much-could-lead-to-high-blood-pressure

American Society for Metabolic and Bariatric Surgery. (2022). Estimate of bariatric surgery numbers, 2011-2020. https://asmbs.org/resources/estimate-of-bariatric-surgery-numbers

Barros, R., Moreira, P., Padrão, P., Teixeira, V. H., Carvalho, P., Delgado, L., & Moreira, A. (2017). Obesity increases the prevalence and the incidence of asthma and worsens asthma severity. *Clinical Nutrition*, 36(4), 1068-1074. https://doi.org/10.1016/j.clnu.2016.06.023

Bhaskaran, K., Douglas, I., Forbes, H., dos-Santos-Silva, I., Leon, D. A., & Smeeth, L. (2014). Body-mass index and risk of 22 specific cancers: a population-based cohort study of 5·24 million UK adults. *The Lancet*, 384(9945), 755-765. http://doi.org/10.1016/S0140-6736(14)60892-8

Boulet, L. P. (2013). Asthma and obesity. *Clinical & Experimental Allergy*, 43(1), 8-21. http://doi.org/10.1111/j.1365-2222.2012.04040.x

de Rezende, L. F. M., Azeredo, C. M., Canella, D. S., do Carmo Luiz, O., Levy, R. B., & Eluf-Neto, J. (2016). Coronary heart disease mortality, cardiovascular disease mortality and all-cause mortality attributable to dietary intake over 20 years in Brazil. *International Journal of Cardiology*, 217, 64-68. http://doi.org/10.1016/j.ijcard.2016.04.176

Fishbein, M. (2009). An integrative model for behavioral predication and its application to health promotion. In R. J. DiClemente, R. A. Crosby, & M. C. Kegler (Eds.), Emerging Theories in Health Promotion and Practice Research (pp. 215-234). Jossey Bass/Wiley.

Groves, R. M. (2006). Nonresponse Rates and Nonresponse Bias in Household Surveys. The Public *Opinion Quarterly*, 70(5), 646–675. http://www.jstor.org/stable/4124220

Halaas, G. W. (2002). *Ministerial health and wellness*, 2002: Evangelical Lutheran Church in America. Division for Ministry Board of Pensions. Chicago, IL.

Hales, C.M., Carroll, M.D., Fryar, C.D., Ogden, C.L. (2020). Prevalence of obesity and severe obesity among adults: United States, 2017-2018. *NCHS Data Brief*, 360, 1-8. https://www.cdc.gov/nchs/data/databriefs/db360-h.pdf

Jensen, M. D., Ryan, D. H., Apovian, C. M., Ard, J. D., Comuzzie, A. G., Donato, K. A., ... & Shen, W. K. (2014). 2013 AHA/ACC/TOS guideline for the management of overweight and obesity in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society. *Journal of the American College of Cardiology*, *63*(25 Pt B), 2985–3023. https://dx.doi/org/10.1016/j.jacc.2013.11.004

King, H., & Bailar, J. C., III. (1969). The health of the clergy: A review of demographic literature. *Demography*, *6*(1), 27–43. https://doi.org/10.2307/2060098

Kitahara, C. M., Flint, A. J., Berrington de Gonzalez, A., Bernstein, L., Brotzman, M., MacInnis, R. J., ... & Hartge, P. (2014). Association between class III obesity (BMI of 40–59 kg/m2) and mortality: a pooled analysis of 20 prospective studies. PLoS medicine, 11(7), e1001673. https://doi.org/10.1371/journal.pmed.1001673

Kivimäki, M., Kuosma, E., Ferrie, J. E., Luukkonen, R., Nyberg, S. T., Alfredsson, L., ... & Jokela, M. (2017). Overweight, obesity, and risk of cardiometabolic multimorbidity: pooled analysis of individual-level data for 120 813 adults from 16 cohort studies from the USA and Europe. *The Lancet Public Health*, 2(6), e277-e285. https://doi.org/10.1016/S2468-2667(17)30074-9

Koenig, H. G. (2012). Religion, spirituality, and health: The research and clinical implications. *International Scholarly Research Notices*. https://doi.org/10.5402/2012/278730

Powell-Wiley, T. M., Poirier, P., Burke, L. E., Després, J. P., Gordon-Larsen, P., Lavie, C. J., ... & American Heart Association Council on Lifestyle and Cardiometabolic Health. (2021). Obesity and cardiovascular disease: A scientific statement from the American Heart Association. Circulation, 143(21), e984-e1010. https://doi.org/10.1161/CIR.0000000000000973

Proeschold-Bell, R. J., & LeGrand, S. H. (2010). High rates of obesity and chronic disease among United Methodist clergy. *Obesity*, 18(9), 1867-1870. https://doi.org/10.1038/oby.2010.102

Proeschold-Bell, R.J., & LeGrand, S. (2012). Physical health functioning among United Methodist clergy. *Journal of Religion and Health*, 51(3), 734-742. https://doi.org/10.1007/s10943-010-9372-5

Proeschold-Bell, R.J. & McDevitt, P.M. (2012). An overview of the history and current status of clergy health. *Journal of Prevention & Intervention in the Community*, 40(3), 177-179. https://doi.org/10.1080/10852352.2012.680407

Using effort-reward imbalance theory to understand high rates of depression and anxiety among clergy. *The Journal of Primary Prevention*, 34(6), 439-453. https://doi.org/10.1007/s10935-013-0321-4

Proeschold-Bell, R.J., Turner, E. L., Bennett, G. G., Yao, J., Li, X.-F., Eagle, D. E., Meyer, R. A., Williams, R. B., Swift, R. Y., Moore, H. E., Kolkin, M. A., Weisner, C. C., Rugani, K. M., Hough, H. J., Williams, V. P., & Toole, D. C. (2017). A 2-year holistic health and stress intervention: Results of an RCT in clergy. *American Journal of Preventive Medicine*, 53(3), 290-299. https://doi/org/10.1016/j.ampere.2017.04.009

Proeschold-Bell, R.J., Steinberg, D., Yao, J., Eagle, D.E., Smith, T.W., Cai, G., & Turner, E.L. (2020). Using a holistic health approach to achieve long-term weight maintenance: Results from the Spirited Life intervention. *Translational Behavioral Medicine*, 10(1), 223-233. https://doi/org/10.1093/tbm/iby117

Rosenthal, T., & Alter, A. (2012). Occupational stress and hypertension. Journal of the American *Society of Hypertension*, 6(1), 2-22. https://doi/org/10.1016/j.jash.2011.09.002

Salgado, G. (2019). I belong to Canada: the role of neighbourhood houses in the mental health of older visible minorities. https://theses.lib.sfu.ca/file/thesis/6199

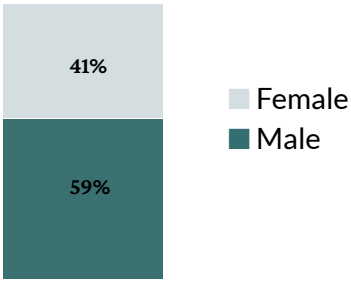
Wespath Benefits. (2021). 2021 clergy wellbeing survey highlights. https://www.wespath.org/assets/1/7/5754.pdf

Wilcox, S., Day, K. R., Saunders, R. P., Jake-Schoffman, D. E., Kaczynski, A. T., Stucker, J., ... & Bernhart, J. A. (2022). The Faith, Activity, and Nutrition (FAN) dissemination and implementation study: changes in and maintenance of organizational practices over 24 months in a statewide initiative. *International Journal of Behavioral Nutrition and Physical Activity*, 19(1), 1-14. https://doi/org/10.1016/j.amepre.2018.02.018

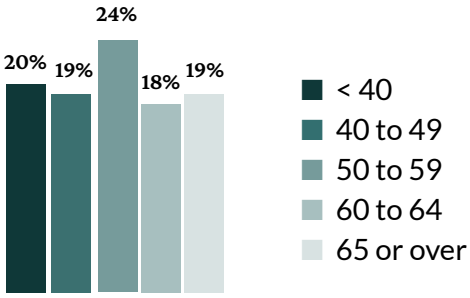
Appendix

NC-UMC 2023 Demographics

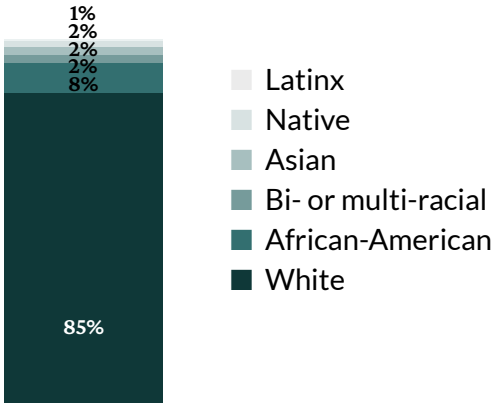
Gender



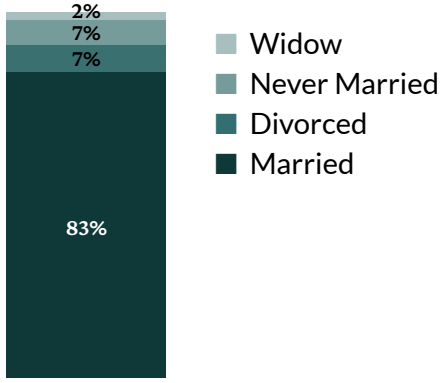
Age



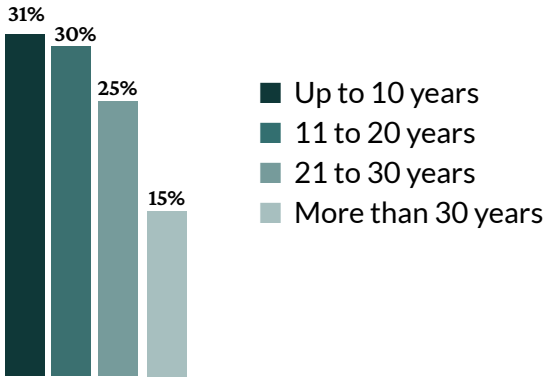
Race



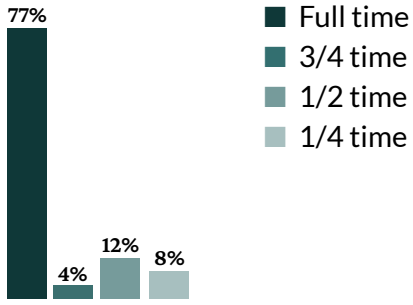
Marital Status



Years in Ministry



Appointment Type



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 Factor 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 wellbeing. 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 wellbeing of clergy. Contact us at clergywb@duke.edu to learn more.

Duke Clergy Health Initiative
Duke University
clergywb@duke.edu
Clergyhealthinitiative.org
Spiritedlife.org
Funded by The Duke Endowment

This report on clergy wellbeing covers 2008-2023. To learn more about this series on our website, scan the QR code