

Knowledge and awareness of uterine fibroid symptoms, diagnosis, and treatment among college students: an online pilot study

Abstract

Background: Uterine fibroids, or leiomyomas, are the most common benign tumors among women of reproductive age, disproportionately affecting Black women, who experience higher prevalence and more severe symptoms. These disparities contribute to increased rates of myomectomy and hysterectomy in this population, with limited awareness and literacy potentially driving higher reliance on invasive surgical treatments.

Patients and Methods: An online survey was administered to cisgender women enrolled at a historically Black university to assess knowledge and awareness of uterine fibroids. Fifty participants completed the survey, which included questions regarding fibroid symptoms, risk factors, diagnosis, and treatment options. Responses were analyzed to identify gaps in knowledge and misconceptions.

Aim: To evaluate the level of understanding of uterine fibroids among young Black women and identify areas where education and awareness could be improved to support informed healthcare decisions.

Results: While most participants had heard of uterine fibroids, significant misconceptions were evident. Sixty-seven percent incorrectly believed fibroids are cancerous, and 41% thought blood tests are used for diagnosis. These findings demonstrate gaps in knowledge that may contribute to delayed care or unnecessary reliance on invasive surgical interventions.

Conclusion: The study highlights a critical need for targeted education on uterine fibroids among young Black women. Improving awareness of symptoms, risk factors, and treatment options may enhance patient empowerment, promote earlier intervention, and reduce the likelihood of unnecessary surgical procedures, ultimately supporting better reproductive health outcomes and quality of life.

Keywords: uterine fibroids, fibroids, leiomyomas, college students, African American women, black women

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Introduction

Uterine fibroids, also known as leiomyomas and myomas, are the most common non-cancerous (benign) tumors impacting reproductive-aged women. Symptoms include heavy menses, pain, reproductive issues, anemia, and frequent urination.¹ The prevalence of uterine fibroids increases based on race and age.² One article reported that more than 80% of Black women and 70% of white women would receive a uterine fibroid diagnosis by age 50.² Black women have a higher cumulative risk and a chance of earlier onset of uterine fibroids symptoms and diagnosis.³

Additionally, the prevalence of uterine fibroids decreases as women approach menopause and is higher in women with other conditions such as high blood pressure and other forms of cancer.⁴ Black women develop uterine fibroids on average 5.3 years younger than white women. Uterine fibroids also tend to be larger in Black women, and there tend to be more uterine fibroids. All these factors lead to different treatment options and greater complications with surgeries.⁴

Myomectomies (removal of fibroids) and hysterectomies (removal of the uterus) are more prevalent in Black women due to them having more significant symptoms and larger fibroids. At one point, hysterectomy was the primary surgery for women who did not want

to have children or had completed childbearing. While hysterectomy is the least preferred treatment option for patients, Black women still undergo hysterectomies at higher rates.² Black women are two to three times more likely to undergo a hysterectomy than white women and 6.8 times as likely to receive a myomectomy.⁵ There are now less invasive procedures available, however they are not widely available to everyone due to treatment disparities, including knowledge of treatment options.⁵

Prior studies did not specifically look at the knowledge and awareness of younger women, defined as under the age of 25. For instance, individuals with the burden of uterine fibroids had a median age of 43.4 years, compared to 35.3 years for controls.⁶ As age increases, the prevalence of uterine fibroid diagnosis increases 13-fold.⁶ The purpose of this study was to identify knowledge and awareness gaps of women under the age of 25. A greater understanding of the knowledge and awareness of uterine fibroids risk factors, symptoms, and treatment options may help inform future treatment decisions.

Materials and methods

The study employed a cross-sectional survey design to assess knowledge and perceptions of uterine fibroids among young women. Approval was obtained from Howard University's Institutional Review

Board, and all participation was voluntary. Data were collected via an online survey hosted on SurveyMonkey between 2024 and 2025. Inclusion criteria required participants to be current students at the university and assigned female at birth. Recruitment efforts included distribution of flyers across campus, posts on social media, and brief verbal announcements in classrooms. Participants accessed the survey by scanning a QR code on the flyer, which directed them first to an electronic consent preamble and then to the survey questions. This methodology allowed for efficient, anonymous data collection while reaching a diverse sample of students in a university setting.

Results

A total of 50 participants returned the survey. Most participants were under the age of 25 and identified as Black or African American. See Table 1 for the participant characteristics.

Table 1 Participant characteristics

Characteristic	N (%)
Age	
18-25	45 (90%)
25-39	3 (6%)
40 and up	2 (4%)
University classification	
Freshman	8 (16%)
Sophomore	9 (18%)
Junior	9 (18%)
Senior	17 (35%)
Grad/Professional	
Race or Ethnicity	6 (12%)
Black or African American	46 (92%)
Mid-eastern	1 (2%)
Multi-racial or multi-ethnic	2 (4%)
White	1 (2%)

Participant characteristics

Most respondents were familiar with uterine fibroids (66%), with the main source of their knowledge being family (42%) and other sources (33%), while TV, social media, and friends were less commonly selected. A high percentage of respondents had never been diagnosed with uterine fibroids (96%) and did not know someone with uterine fibroids (65%).

The majority recognized that Black women were diagnosed at a higher rate (92%) compared to White women. There was a high knowledge and awareness of symptoms, with 92% correctly identifying heavy bleeding as a symptom and that ultrasound is used to diagnose uterine fibroids (90%). Knowledge gaps were clear, with the lowest knowledge levels pertaining to uterine fibroids being cancerous (67%) and that blood tests are used to diagnose uterine fibroids (41%). All results can be found in Table 2.

Table 2 Survey questions and results

Question	N (%)
Have you heard of uterine fibroids?	
Yes	33 (66%)
No	17 (34%)
If yes, how did you hear about uterine fibroids?	
TV	1 (3%)
Social Media	6 (16%)

Table 2 Continued...

Family	15 (42%)
Friends	2 (6%)
Other	12 (33%)
Have you been diagnosed with uterine fibroids?	
Yes	2 (4%)
No	47 (96%)
Do you know someone who has/had uterine fibroids?	
Yes	17 (35%)
No	32 (65%)
Uterine fibroids are cancerous	
True	16 (33%)
False	33 (67%)
Black women are diagnosed with uterine fibroids at a higher rate than White women	
True	45 (92%)
False	4 (8%)
Environmental factors increase the chances of developing uterine fibroids	
True	38 (78%)
False	11 (22%)
Your diet (what you eat and drink) does not impact your chances of developing uterine fibroids	
True	12 (24%)
False	37 (76%)
Obesity is a risk factor for uterine fibroids	
True	38 (79%)
False	10 (21%)
Uterine fibroids do not tend to run in families	
True	7 (14%)
False	42 (86%)
Heavy bleeding is a symptom of uterine fibroids	
True	45 (92%)
False	4 (8%)
Ultrasound is a test used to diagnose uterine fibroids	
True	44 (90%)
False	5 (10%)
Uterine fibroids can be diagnosed with a blood test	
True	20 (41%)
False	29 (59%)
Hysterectomy (complete removal of the uterus) is the only treatment for uterine fibroids	
True	6 (12%)
False	43 (88%)

Discussion

Uterine fibroids are a chronic and potentially debilitating condition that disproportionately affects women of reproductive age, particularly Black women, who often experience earlier onset and more severe symptomatology. Although the pathology, epidemiology, and clinical management of uterine fibroids are well-documented, there remains a notable gap in the literature regarding younger women's knowledge and perceptions—specifically those under 25—about symptom recognition, risk factors, diagnosis, and treatment. In the current study, 66% of respondents reported prior awareness of uterine fibroids, slightly higher than the 50% awareness reported in a 2016 study by Marsh et al.,¹ suggesting incremental but still limited exposure to accurate information among young women.

Encouragingly, 88% of participants understood that hysterectomy is not the only treatment option; however, 12% incorrectly believed that it is the sole treatment. Treatment strategies for uterine fibroids are diverse, ranging from conservative “watchful waiting” approaches to pharmacologic interventions—including iron supplementation, hormonal therapies, and pain management—to surgical options such as myomectomy and hysterectomy. Myomectomy itself is further stratified by technique, including hysteroscopic, laparoscopic, and open abdominal approaches, with each offering varying implications for fertility preservation and recovery. Decisions about treatment should be individualized, taking into account fibroid size, location, symptom burden, patient age, and reproductive goals, emphasizing a collaborative, patient-centered approach.

Of concern in this study, 41% of participants believed that blood tests could diagnose uterine fibroids, reflecting a persistent misconception that may delay timely intervention. While blood tests are valuable for assessing secondary effects such as anemia, imaging remains the definitive diagnostic tool. Previous studies have identified several contributors to delayed treatment, including normalization of symptoms, limited knowledge, perceived low risk, avoidance behaviors, and dissociation from the diagnosis. Lower health literacy and limited awareness of non-hysterectomy options further exacerbate delays in care, particularly among women of lower socioeconomic status. Consequently, these women may only seek treatment once symptoms become severe enough to necessitate more invasive interventions.⁴

Even among women who undergo hysterectomy, reproductive desires remain significant; approximately one-third expressed moderate to high interest in uterine preservation, and half desired future fertility.¹ This underscores the importance of early, targeted discussions with young women regarding fertility consequences, options for fertility preservation, and potential costs associated with assisted reproductive technologies. Effective patient education should be comprehensive, culturally responsive, and aligned with the patient’s health literacy level, covering the full spectrum of risk factors, symptoms, diagnosis, and treatment alternatives along with their benefits and limitations. Healthcare practitioners must ensure that recommendations are equitable and uninfluenced by factors such as insurance coverage, income, or educational attainment, to empower patients to make informed, individualized decisions.^{7–10}

Limitations

This study utilized an online survey to gather information about students’ knowledge regarding the symptoms, diagnosis, and treatment of uterine fibroids on a college campus. A total of 50 students completed the survey. Given the size of the university, this small sample size limits the generalizability of the results and their applicability to other colleges and universities. The primary participants were undergraduate students, which means that many professional and graduate students enrolled at the university were excluded. Additionally, some individuals may not have had access to a phone capable of scanning the QR code used for the survey.

Conclusion

This study highlights significant gaps in knowledge and awareness concerning uterine fibroids among young women, particularly college

students. Research shows that Black women are diagnosed with uterine fibroids at higher rates and often experience worse health complications and outcomes. It is essential to educate women at an earlier age. A proactive approach to educating young women is vital for ensuring early diagnosis and access to all available treatment options. The findings demonstrate the importance of increasing knowledge and awareness about the risk factors, diagnosis, and treatment of uterine fibroids among younger women and those concerned about preserving their fertility.

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Conflicts of interest

Authors have no conflicts of interest to declare.

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