Screening for Uterine Fibroids in Black Women

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Screening for Uterine Fibroids in Black Women

A Quality Improvement Initiative in a Primary Care Clinic

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Screening for Uterine Fibroids in Black Women

Section I: Abstract

**Background:** Uterine fibroids are benign growths in the uterine muscle that affect around 70% of women. Black women have a higher risk, with three times the likelihood of developing fibroids compared to other races.

**Problem:** The issue of uterine fibroids continues to be poorly addressed in healthcare settings. Black women continue to be particularly adversely impacted by this problem. There is a lack of better screening methods, leading to late detection and limited treatment options for those hoping to maintain fertility.

**Methods:** A quality improvement project was implemented at a primary care clinic in Loma Linda, California, using the Uterine Fibroid Symptom and Health-Related Quality of Life (UFS-QOL) questionnaire to screen for fibroid symptoms in Black women.

**Interventions:** A four-step intervention was implemented to educate and screen black women for fibroids. The interventions were well-received and provided essential information and support to those screened.

**Results:** Twenty black women were screened for fibroid symptoms using the UFS-QOL questionnaire. Eleven had severe symptoms, four had already been diagnosed, and seven were undiagnosed.

**Conclusion:** Early detection of fibroids is crucial for effective treatment, especially for women who wish to conceive in the future. The UFS-QOL questionnaire has been instrumental in identifying fibroids in women who were previously unaware of their condition.

**Keywords:** Uterine fibroids, symptoms, Black women, screening questionnaire, fibroids
Section II: Introduction

Background

Uterine fibroids are benign noncancerous growths that develop from the muscle tissue of the uterus. While the cause of fibroids is unknown, several risk factors are associated with the disease, such as age, black race, family history, diet, perimenopause, and hypertension (March et al., 2018). Fibroids are prevalent, with an estimated 75% of women having at least one fibroid by the age of 50 and 80% of those women being of African descent (Fantasia & Harris, 2020). Women with fibroids can be asymptomatic or symptomatic. Although not life-threatening, symptoms of fibroids may include heavy, prolonged menstrual bleeding, pain, anemia, dyspareunia, constipation, urinary incontinence, or retention, and can negatively impact a woman's quality of life. (Stewart et al., 2017). Women need to be aware of the signs and symptoms of fibroids and seek medical attention.

Problem Description

It is concerning to note that Black women are disproportionately affected by fibroids, with a higher incidence rate and risk than other populations. Black women have a two- to threefold higher risk of developing uterine fibroids than White women, with an incidence three times higher than in other populations (Stewart et al., 2017). Despite having a higher risk of developing fibroids, little is being done to manage the disease clinically. In a literature review, Stewart et al. (2017) revealed that Black women who experience fibroid symptoms do not seek treatment due to limited knowledge of the disease or negative interactions with healthcare providers. A qualitative research study supported the findings. Ghant et al. (2016) found that about 48% of the participants knew nothing about fibroids until diagnosis, and 55% were self-managing fibroid symptoms without medical assistance. Healthcare providers have been accused
of neglecting fibroid symptoms and failing to offer alternative treatment options, which inevitably slows the diagnosis process. VanNoy et al. (2021) did a qualitative study to evaluate black women's experiences with fibroid treatments. The women reported poor interactions with the providers, dismissals of symptoms, and symptoms attributed to other issues as barriers to obtaining a fibroid diagnosis (VanNoy et al., 2021). Many healthcare facilities that provide women's reproductive services lack the necessary screening tools to detect fibroid symptoms. To address this, it is crucial to increase awareness and provide adequate resources to ensure that Black women receive the necessary care they deserve. A quality improvement initiative was implemented to detect the disease early and offer better treatment options, using a uterine fibroid (UF) symptom questionnaire that screens for fibroid symptoms.

**Setting**

PriMer Healthcare Family primary clinic was selected to implement this quality improvement project initiative to screen for fibroids symptoms in black women. The clinic offers various health services, including prevention and wellness, chronic disease management, immunizations, and annual health risk assessments, making it an ideal location for the project's targeted population. The clinic's directors approved the project implementation (see Appendix A for a letter of support), as it aligns with the clinic's objectives of screening for diseases. The clinic is affordable to low to medium earners, with minimum co-pays, and is conveniently located near Black neighborhood communities.

**Specific Aim**

The project aimed to create, implement, and evaluate uterine fibroid screening (UFS) intervention in Black women aged 21 to 60 as a quality improvement initiative in a primary clinic in Loma Linda, California. The main goal is to increase the screening of the disease
symptoms in Black women by 50% within two months of implementation. Through screening, fibroid tumors can be detected early, reducing the need for hysterectomies, and women of childbearing age can get better treatment options. An additional intervention objective was to bring providers’ attention to the underdiagnosis of uterine fibroids in Black women.

**Available Knowledge**

**PICOT Question**

In Black women (P), how will screening for uterine fibroid symptoms and educating providers about the disease in this population (I), compared to no screening or education provided (C), improve clinical management of the disease (O) within two months of implementation (T)?

**Search Methodology**

The review of the evidence utilized the CINAHL Complete and PubMed databases. The PICOT question guiding the search was, “In Black women, how will screening for uterine fibroid symptoms and educating providers about the disease in this population, compared to no screening or education provided, improve clinical management of the disease within four months of implementation?” The selected articles were published within the last five years, 2017-2022, with one exemption. The publications were in the English language and peer-reviewed academic journals. Keywords used were *uterine fibroids, Black women, African Americans, screening, access to healthcare, and providers*. The initial total was 30 articles, ten of which were relevant to this review and evaluated using the Johns Hopkins Nursing Evidence-Based Practice Appraisal tool. The summary of the articles is in a table in Appendix B.
Integrated Review of the Literature

The literature review examined how uterine fibroids affect Black women, their experiences in seeking treatment, fibroid screening tools, and potential treatment options.

Incidences of Uterine Fibroids in Black Women

Studies have shown that Black race is a risk factor for uterine fibroids. In a systematic review, Stewart et al. (2017) examined over 30 risk factors for uterine fibroids across different studies and found that the Black race was a reoccurring factor. Stewart et al. also found that the incidence recorded from the Black Women’s Study was three times higher than in the Nurses Healthy Study among Hispanic, Asian, and White women. The risk of developing uterine fibroids in African American women increases with age. Baird et al. (2020), in a prospective study of 1,123 young African American women ages 23 to 35, measured fibroid incidence and growth in relation to age. The authors found that within the 18-month follow-up, 106 women without fibroids had developed them, and the incidence increased with age: 23 to 25 years, 6% increase; 26 to 28 years, 8% increase; 29 to 31 years, 11% increase; and 32 to 35 years, 13% increase (Baird et al., 2020). This study validated prior studies that showed that tumor onset in African Americans typically begins in their twenties.

The burden of disease of uterine fibroids is more severe in African American women, who tend to have lower socioeconomic status when compared to women of other ethnicities. A study by Marsh et al. (2017) found that women making less than $60,000 had significantly higher symptom severity scores than women making more than $60,000. VanNoy et al. (2021) found that Black women with college degrees and private insurance managed their symptoms better than women of low socioeconomic status.

Black Women’s Experiences in Seeking Fibroid Treatment
The healthcare disparities faced by Black individuals affect their ability to seek treatment. In a qualitative study, VanNoy et al. (2021) analyzed Black women’s experiences seeking treatment for fibroids among 37 Black women undergoing myomectomy or hysterectomy for fibroid management. The participants narrated different experiences while seeking treatment for fibroids. In the study, six women reported poor interactions with the provider as the barrier to obtaining a fibroid diagnosis, three reported dismissals of symptoms by the provider, and three said their symptoms were attributed to another issue (VanNoy et al., 2021). Most participants \( (n = 7) \) were told “not to worry” during their initial fibroid diagnosis when attempting to determine the risk of fibroid complications (VanNoy et al., 2021). Others expressed their frustrations when seeking fibroid management options. Four women reported that a hysterectomy was the only option given to them. The participants expected the clinicians to offer information about lifestyle modifications or preventive measures, but the clinicians offered no proper information for the participants to make informed treatment decisions. Participants reported relying on online sources and social networks to assist in choosing the best treatment plan. VanNoy et al. found that Black women often delayed treatment due to their clinicians’ dismissal of symptoms or incorrect attributions to other conditions (VanNoy et al., 2021).

Ghant et al. (2016) reported that Black women with fibroid symptoms were less likely to visit a healthcare provider to seek treatment than White women (6% vs. 18%). The delay was because of the negative prior experience in seeking treatment. Reports indicated that Black individuals are treated differently than White individuals when it comes to receiving care. The 2013 National Healthcare Disparities Report revealed that White patients received better quality of care than Black Americans and other populations, such as Latin and Native Americans, received (Hall et al., 2015). A study showed that providers tend to have unconscious biases when
dealing with Black patients. In their review, Hall et al. (2015) found that most healthcare professionals have an implicit bias that negatively affects their care delivery. The authors define implicit bias as “thoughts and feelings that often exist outside of conscious awareness, and thus are difficult to acknowledge and control consciously” (Hall et al., 2015). The healthcare assumptions related to race affect patient-provider interactions. In their review, Hall et al. found in 14 of the 15 studies evidence of low to moderate implicit bias against people of color among healthcare professionals. Results revealed that Black patients received poorer treatment than White patients (Hall et al., 2015).

Individual racism is another factor Black women experience while seeking sexual and reproductive healthcare. Thompson et al. (2022) conducted qualitative research on women living in Georgia and North Carolina to examine structural and individual racism in the reproductive health experience of Black women. The women in the study reported a lack of empathy, insufficient health information, hard-to-understand terminology, being stereotyped, and feeling undervalued or unwelcome (Thomas et al., 2022). One of the participants in the research reported,

So, one time I had gone to the hospital because I was like overt bleeding, like really, really hard, and I shouldn’t have been. ... I feel like nothing happened. I feel like I got an $800 bill to be looked at, asked if I was assaulted, repeatedly have to tell people I wasn’t assaulted, and then be like, ‘Oh, OK, go home.’ And after that, I really just stopped going to the doctor altogether because I felt like I didn’t get any kind of help at all. (Thompson et al., 2022, p. 4)

This was one of many reported experiences describing Black women’s challenges while seeking fibroid treatment.
Screening for Uterine Fibroids

One way to address the increasing incidence of uterine fibroids in Black women is to screen for the symptoms of fibroids at every patient visit. Currently, no screening tool is utilized at common clinics like Planned Parenthood or FPA Women’s Health clinics. Spies et al. (2002) developed the screening tool Uterine Fibroid Symptom and Health-Related Quality of Life (UFS-QOL) questionnaire to evaluate the treatment outcomes for women with fibroids. The tool can be modified to assess uterine fibroid symptoms in primary care clinics. Spies et al. (2002) created and validated the uterine leiomyomata questionnaire for assessing disease symptom severity and the effects on the quality of life in women suffering from leiomyomata. The UFS-QOL questionnaire was derived from women with leiomyomata, clinical opinion, and literature review. Participants were recruited from five gynecologists’ offices, an interventional radiology department, and a university campus. One hundred ten patients with confirmed leiomyomata and 29 healthy subjects participated in the project. The screening questions were derived from other health questionnaires: the Medical Outcomes Study Short-Form 36 Healthy Survey, a menorrhagia questionnaire, the Revicki-Wu Sexual Function Scale, the Severity-Related Symptom Severity, and a clinical variable questionnaire. The final UFS-QOL questionnaire had eight symptom questions and 29 health-related quality-of-life questions (Spies et al., 2017).

The UFS-QOL reliability, responsiveness, and validity have been tested in China and shown to be effective. Yeung et al. (2019) translated the UFS-QOL questionnaire into Chinese, which 223 Chinese women completed with fibroids from a gynecology clinic between July 2015 and July 2016. The women were offered individualized treatment and followed after treatment. Results of the questionnaire showed women reported cycle irregularity (28.3%), menorrhagia (73.3%), dysmenorrhea (47.1%), and pressure symptoms from fibroids (29.1%), while 12.1%
were asymptomatic (Yeung et al., 2019). The percentages indicate that the UFS-QOL was reliable in screening for uterine fibroid symptoms. The questionnaire showed great reliability with a Cronbach’s alpha of 0.7 for all questionnaire subscales. Of the 100 followed, 50 received treatment, and 21 had surgery or uterine artery embolization (UAE); there was a reduction in symptom severity and improved quality of life for all participants (Yeung et al., 2019).

**Treatment Options**

In the Fantasia and Harris (2020) study, some Black women stated that hysterectomy seemed to be the only option offered to them, and it was not ideal for women seeking to have children in the future. The authors evaluated different treatment options for women who do not want a hysterectomy. To manage the symptoms of dysmenorrhea, patients may take NSAIDs. For heavy menstrual bleeding, women may receive tranexamic acid, an oral antifibrinolytic used during menstrual bleeding, or a Progestin-containing intrauterine device with 52 mg of levonorgestrel to reduce heavy bleeding and decrease dysmenorrhea symptoms (Fantasia & Harris, 2020). Other medications can induce amenorrhea to reduce bleeding. A commonly used medication is leuprolide acetate, a gonadotropin-releasing hormone agonist that induces amenorrhea, produces a hypoestrogenic state, and reduces uterine volume, including fibroid size. For surgical procedures, myomectomy is preferred for women wishing to preserve their uterus and fertility (Fantasia & Harris, 2020).

According to Fantasia and Harris (2020), other procedures are contraindicated for women planning to become pregnant. MRI-guided focused ultrasonography uses thermal ablation to destroy fibroid tissue. UAE is another common and effective method. UAE is a minimally invasive interventional radiologic procedure that causes necrosis to the fibroids, which is not recommended for women wanting to preserve fertility (Fantasia & Harris, 2020).
Summary of the Evidence

Evidence shows that uterine fibroids disproportionately affect Black women. Black women are at a high risk of developing these bothersome, noncancerous tumors. Due to severe symptoms that negatively impact their quality of life, Black women are starting to seek treatment, and their experiences in healthcare facilities are not pleasant. Unfortunately, implicit racism and individual racism persist in our healthcare system. To correctly manage this population health problem, providers must be educated about the prevalence and the increasing incidences of uterine fibroids in Black women and be aware of implicit bias. One study showed that tumors were present in some women as early as 20 years of age. Early screening for fibroids has demonstrated excellent outcomes. A UFS-QOL questionnaire is a simple tool that can be used in primary care clinics to screen for fibroid symptoms and offer better and more timely treatment interventions. When this questionnaire was used in China, half of the study participants got treatment and improved their quality of life. Many Black women have complained of only being offered the option of hysterectomy as a treatment option or having their symptoms dismissed. Other treatment options, such as leuprolide or tranexamic acid and myomectomy, are effective for women desiring to become pregnant.

Rationale

The health belief model (HBM) was used to guide this project. A social psychologist at the U.S. Public Health Service developed the HBM in the 1950s to explain the failure of people to take on disease prevention programs or screening for early detection (Glanz et al., 2015). There was free screening for tuberculosis during this time, but few people were getting screened. The developer wanted to understand what motivated people to make healthy behavioral changes. The results were six constructs that projected reasons people would take preventive measures to
detect or control an illness: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Glanz et al., 2015; see Appendix C). A significant challenge was encountered in screening for fibroids in black women, similar to the one tuberculosis faced in the 1950s. During the initial stages of implementation, there was a lack of participation, as none of the women showed up for screening. The primary reason was that the women did not perceive the benefits of being screened for disease symptoms. Furthermore, some women faced additional barriers, such as a lack of healthcare insurance or transportation to the clinic. However, applying the Health HBM concepts (described in Appendix C) proved effective in mitigating these barriers and encouraging women to undergo screening. As a result, the screening process was successful, and more women were able to benefit from it.

Section III: Methods

Context

The project was implemented at PriMer Healthcare Family Medical Clinic. This clinic specializes in general health, disease prevention and wellness, family planning, and other services, such as managing chronic diseases. The patient population is pediatrics, adults, and geriatric. The clinic is in San Bernadino County, California. It attends to patients in and around Loma Linda, Riverside, and San Bernadino. These are areas with a considerable Black population. The clinic is located close to Loma Linda University Medical Center, a hospital with a women’s health and fertility center. Currently, there is no screening tool for uterine fibroids in PriMer Healthcare Family Medical Clinic. The UFS-QOL was developed by Spies et al. (2002) to assess fibroid symptom severity and symptoms’ impact on health-related quality of life. Currently, it is being utilized in other research to measure patient outcomes in pre- and post-treatment symptoms.
Interventions/Implementation

Implementing intervention to address fibroids in black neighborhoods was a comprehensive 4-step process. It involved meeting with clinic providers and medical assistants, visiting communities, scheduling appointments, screening, and educating about fibroids. The entire process is outlined in Appendix D. Evidence shows that some black women do not know about UF, and some struggle with self-managing the disease symptoms. To tackle this issue, the USF DNP student (author) initiated a quality improvement project to screen for fibroid symptoms using the UFS-QOL questionnaire. The questionnaire is a tool that helps providers to detect fibroid symptoms early and offer fertility-friendly treatment options. The Journal of Women's Health published an article by Aninye et al. (2021) emphasizing the importance of a more comprehensive assessment of UF. The authors suggest that providers should include questions that elicit quantifiable responses to identify patients whose experiences are not within the normal range in screening for UF (Aninye et al., 2021). The UFS-QOL questionnaire that screens for the eight common fibroids symptoms has successfully detected fibroids tumors in women who were previously unaware of them.

Meetings. Before conducting the screening for the disease process, a couple of meetings were held. The first meeting was with the clinic providers to discuss the management of the disease and explore ways to improve it using the project initiative. After careful consideration, the providers agreed to use the UFS-QOL questionnaire, which was simple and addressed major fibroid symptoms. The second meeting was held with gynecologists to gain more insights about fibroid and treatment options. A training session was also conducted to teach how to use the UFS-QOL questionnaire.
Project outreach. To reach out to black communities and spread the word about the fibroid screening project, a visit was made to a black people's church to talk to the leader and ask him to share the clinic project in one of the services. Black women's salons were also approached to educate hairdressers about screening for the disease and urge them to spread the word to their friends. In addition, black women's groups and pages were posted on social media, briefly describing the project and urging women to contact the clinic for screening.

Screening. During the screening process, a post was displayed in the waiting room (Appendix E), and brochures (Appendix F) were given to the women screened. The UFS-QOL questionnaire (Appendix G), which had eight symptoms, was used to screen for fibroid symptoms.

Gap Analysis

A gap analysis assists in identifying the gaps that exist between an organization's current situation and what ought to be in place (Kim & Ji, 2018). The gaps in screening for uterine fibroids in Black women inspired this project. It is recommended that every woman be screened for breast cancer, pap smears, and sexually transmitted infections; however, little emphasis is put on screening for fibroid symptoms. Surprisingly, no screening tool is used in clinics such as Planned Parenthood, which women commonly frequent. Moreover, many women with fibroid symptoms are unaware of the condition. According to a study by Ghant et al. (2016), women had no prior knowledge of the disease. When asked about the disease, one participant stated,

With a bachelor’s degree and a master’s degree in science and chemistry, I had no idea what these symptoms were. Thinking back to anatomy and physiology classes, we talked about having babies talked about different forms of cancer, but did they ever mention a fibroid? I do not think so. (Ghant et al., 2016, p. 3)
During the Society for Women's Health Research roundtable meeting, Aninye et al. (2021) concurred with the study findings and recommended implementing a curriculum to expand fibroid medical education beyond gynecologic specialists. The meeting also highlighted the need for a more effective screening method to detect symptoms early and provide early treatment options for at-risk individuals. The UFS-QOL questionnaire was found to help address these gaps. A comprehensive gap analysis report can be found in Appendix H.

**Gantt Chart**

A visual representation of the project tasks and their corresponding timelines was created using a Gantt chart (please refer to Appendix I). The chart outlines the various milestones of the project, such as coursework and clinic activities. The coursework includes conducting literature research, manuscript writing, prospectus writing, and presenting the project orally. On the other hand, the clinic activities include scheduled meetings with clinic directors, the project chairperson, and women who have fibroids. The chart also includes important dates for both the project implementation and writing.

**Work Breakdown Structure**

A work breakdown structure provides the project management team and stakeholders with a visual framework for project planning and control. Incorporating a work breakdown structure was a constructive approach to planning and supervising the project from start to finish effectively. The framework, divided into five stages - identification, planning, analysis, implementation, and evaluation - provided a clear roadmap to track progress and visualize the project's trajectory. Each stage was easily approached by breaking the project into smaller, more manageable tasks. A detailed view of them is in Appendix J.

**Responsibility / Communication Matrix**
Throughout the project, there was much communication between various individuals, including the academic advisor, project chairperson, clinic directors, Black women, and a gynecologist. The discussions with the academic advisor were primarily focused on the selected project and interventions, while the project chairperson meeting involved writing the manuscript and prospectus paper, implementing the project, and analyzing the results. Face-to-face meetings were held with the clinic director to explain the project, get approval, and find ways to help women who did not have healthcare insurance. Different encounters were held with Black women to learn about their experiences with fibroid symptoms, and a meeting with gynecologists was held to discuss treatment options and acceptable payment options. A breakdown of the frequency and methods of communication is in Appendix K.

**SWOT Analysis**

The summary of the SWOT analysis can be found in Appendix L. It illustrates the strengths, weaknesses, threats, and opportunities for the project's successful implementation. The project's strengths included an effective intervention addressing fibroid management gaps, a clinic near black neighborhoods, support and approval from clinic directors and school leadership, and a DNP student conducting the screening. However, the identified weakness included black women's resistance to being screened, lack of knowledge about uterine fibroids, lack of healthcare insurance, and transportation to visit the clinic. The threats were bearing the cost of uninsured individuals, staffing shortage, and allowing two days to screen at the clinic. Despite these threats, the opportunity was to educate and screen women with fibroid symptoms and encourage them to seek treatment.

**Budget and Cost-Effective Analysis**
The budget for this project was initially proposed to be $500, but the implementation cost was much more than expected, totaling $900. The project had to cover the expenses of eight patients without insurance, and the DNP student had to pay for their clinic visits. Additionally, the project provided lunch and printed educational materials for these patients. Appendix M shows expenditure accounting.

A cost-effective analysis is ideal for this project as it compares the cost of early screening, confirming the diagnosis, and offering fertility-friendly interventions to waiting until the fibroids grow large, requiring significant surgery like a hysterectomy. Carls et al. (2008) conducted a study to determine the total costs of surgical treatment for uterine fibroids and outlined medical costs for each fibroid surgical procedure. According to their findings, the costs for each procedure were UAE $20,634 for UAE, $17,390 for hysterectomy, $18,674 for myomectomy, and $13,019 for endometrial ablation, in addition to missed workdays costing employers $25,229. Pelvic ultrasound costs $500, and a 6-month treatment with fibroid shrinking drug Danazol is $1,200, according to CostHealper Health (n.d.). Screening with the UFS-QOL questionnaire is free. If fibroids are detected early and treated with drugs, the cost averted is treatment with surgery, costing approximately $20,000, plus missed workdays costing $25,229, for a total of $45,229. The net cost is the intervention cost minus averted medical cost. For this example, it is -$43,529, which means cost savings. Assuming the change in health outcome is ten surgery cases averted, and the cost-effective ratio is $4,352.90 per surgical case prevented. Appendix N shows a calculated cost-effective analysis.

**Outcome Measures**

The project has yielded remarkable outcomes. In just two months of implementing the project, the number of women who received screenings increased by 80%. More women
participated, and the percentage of those seeking screening for fibroid symptoms rose from 20% to 80%. The UFS-QOL questionnaire effectively identified the potential presence of uterine fibroids in 55% of previously undiagnosed women. These results demonstrate the effectiveness of the project's interventions and the importance of early screening.

**Analysis, Data Collection, CQI Method**

The clinic maintained a comprehensive record of all women who underwent screening for fibroid symptoms, using the International Classification of Diseases (ICDC) code D25.9 specifically for leiomyoma of the uterus unspecified. The number of women screened data was extracted from Athena, the clinic's charting software. A thorough quantitative analysis was conducted to measure the number of women who had the screening intervention. A descriptive analysis was also performed to understand better the demographics of the women screened.

**Ethical Considerations**

Participation in this project was voluntary. The principle of autonomy was applied; participants had the right to accept or refuse screening. Their personal information was protected, and verbal consent was received before the screening. The University of San Francisco's DNP department approved the project on September 4, 2022 (See Statement of Determination Appendix O). The American Nurses Association (ANA, 2015) Code of Ethics and USF Jesuit values guided the project. Jesuit value of respect was followed to ensure that every woman was treated equally and fairly. Additionally, the clinic adhered to Provision 1 of the ANA code, which emphasizes compassionate care and respect for every person's inherent dignity, worth, and uniqueness. By putting these principles into practice, the participants' privacy was maintained, and respect was shown to every woman screened. This project supports psychological safety by
assessing the participants' mental status. A comprehensive mental status evaluation was done during the screening phase to guarantee that everyone was stable and comfortable.

Section IV: Results

Initially, the project implementation was planned for between mid-January 2023 and May 2023, with a proposed approach of randomly screening black women of childbearing age who visited the clinic for other illnesses besides uterine fibroids (UF). However, after conducting a preliminary assessment, it was discovered that only older black women in their 80s frequented the clinic. Further research into the clinic's charting system revealed that only 5 black women had visited the clinic with fibroid symptoms in the last 6 months. This finding necessitated a change in the screening approach.

In May 2023, a different approach was taken to screen women for fibroid symptoms. The approach involved reaching out to black salons and leveraging popular social media sites among black women to disseminate information about the screening initiative. This strategy proved successful, with 20 black women successfully screened for fibroid symptoms using the Uterine Fibroid Symptom and Quality of Life (UFS-QOL) questionnaire by the end of June. The age range of the screened women was between 22 to 52 years old, with 15 having not completed college, 8 being unemployed, 9 having no healthcare insurance, and 5 having no prior knowledge of fibroids. From the questionnaire, 11 women exhibited severe symptoms that could indicate fibroids' presence, four were previously diagnosed, and seven were undiagnosed. Appendix Q provides further details on how the diagnosis of a possible fibroid was calculated from the questionnaire responses.
The following table summarizes the demographic characteristics of the respondents.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Features</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages</td>
<td>21-30</td>
<td>4</td>
<td>20%</td>
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<tr>
<td></td>
<td>31-40</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>41-50</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>51+</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Education</td>
<td>Less than HS</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>HS</td>
<td>11</td>
<td>55%</td>
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<tr>
<td></td>
<td>College</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>Employment</td>
<td>Employed</td>
<td>12</td>
<td>60%</td>
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<tr>
<td></td>
<td>Not Employed</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Insurance</td>
<td>Insured</td>
<td>12</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>Not Insured</td>
<td>8</td>
<td>40%</td>
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</tbody>
</table>
While all the employed participants had knowledge of UF, only three of the eight unemployed participants knew about UF. The same was true in the insured group; they all had prior knowledge, while only 3 of the uninsured participants had the knowledge.
The following graph shows UF knowledge among participants skewed low for those with low education levels compared to those with higher education levels.

- Only one of the four participants with less than high school education knew about UF.
- Three with less than high school education didn't know about UF.
- Nine of 11 high school graduates knew about UF.
- Two of 11 high school graduates didn't know about UF.
- All five respondents with college education knew about UF.

Using the screening tool, nine participants had a low risk of having UF, four had a moderate risk, and seven had a high risk.
Section IV: Discussion

Summary

A quality improvement project has recently been undertaken at a primary care clinic to address the issue of managing uterine fibroids in black women. As is well-known, black women have the highest incidence of fibroids among all risk factors. Research has shown that some black women are not fully aware of the disease and believe that symptoms such as heavy menstrual bleeding are simply a result of genetics. Even when they are aware of the disease, some women may be hesitant to seek treatment due to the possibility of losing their ability to have children after treatment options like hysterectomy. Providers have been working to assess fibroid symptoms early, but some women have reported that their symptoms have been attributed to other conditions.
In order to improve the clinical management of the disease, a DNP student initiated the use of the UFS-QOL questionnaire. This tool had previously been used to measure patient outcomes after fibroid treatment, but it was used in this case to detect fibroid symptoms before a diagnosis was made. The project occurred in a primary care clinic, where twenty women were screened. Of these women, 11 exhibited severe symptoms that suggested the presence of fibroids. Four women had already been diagnosed, while the remaining seven were undiagnosed. These women were referred to their primary care providers for follow-up.

It is important to note that the screening tool's sensitivity and specificity were not established, as confirmation of diagnosis had not been received from the undiagnosed women who exhibited symptoms that indicated the possibility of fibroids. Nonetheless, the project represents a significant step towards improving the management of uterine fibroids in black women, and it is hoped that the use of the UFS-QOL questionnaire will prove to be a valuable tool in detecting the presence of fibroids early on.

**Limitations**

During the project, it was a challenge to find black women who were willing to receive screenings. Many in the community have had negative experiences seeking healthcare, leading to a lack of trust in the system. Additionally, some women were unemployed and had no insurance, making it difficult to cover screening costs. Unfortunately, due to time constraints and limited resources, only a few women could be screened during the two-day clinic.

**Conclusion**

The focus of our quality improvement project was to identify and address the gaps in the assessment of uterine fibroids, which have a higher incidence rate among black women. The findings indicate that the UFS-QOL questionnaire was highly effective in identifying cases of
fibroids in women who were previously unaware of their condition. The screening process was met with a positive response from the participating women, who expressed gratitude for the opportunity to gain more knowledge about this condition. Some even recommended that the DNP student who led the project consider opening a fibroid clinic to help address this inadequately managed health concern.

**Section VI: Funding**

There was no external financial support received for this project. The DNP student undertook this project to enhance the quality of life of many women she has encountered struggling with this disease.
Section VII: References


University of San Francisco. (2019). *Our values.* https://www.usfca.edu/about-usf/who-we-are/our-values


Appendix: A

DNP project site. [External]

Winnie Kagendo <winkagendo@dons.usfca.edu>
to Priscilla, Trinette

Mon, Apr 17, 9:22PM (22 hours ago)

Dear Dr. Otubuah

Thank you for approving my request to use your facility ( Primer Health Family Clinic, Loma Linda, CA) in implementing my project.

At your convenience, please respond to this email, it will suffice as proof of acceptance that I could share with my Program director.

Again, I'm deeply appreciative of your kindness.

Thank you very much,
Winnie.

Priscilla Otubuah <potubuah@primerhealthcare.com>
to me, Trinette

10:30 AM (9 hours ago)

Yes, I approve.
Thank you.
Dr. Priscilla Naamomo Otubuah, Ph.D, DNP, FNP-BC, PMHNP-BC
24950 Redlands Blvd., Suite F.
Loma Linda, CA 92354.
Office Phone Number: +1 909-283-4033
Fax: 855-621-1987
cotubuah@primerhealthcare.com

wwwprimerhealthcare.com
## Appendix: B

Evaluation Table

<table>
<thead>
<tr>
<th>Purpose of article or review</th>
<th>Design / Method / Conceptual Framework</th>
<th>Sample / Setting</th>
<th>Major variables studied with definitions</th>
<th>Measurement of major variables</th>
<th>Data analysis</th>
<th>Study findings</th>
<th>Level of evidence (critical appraisal score) / Worth to practice / Strengths and weaknesses / Feasibility / Conclusion(s) / Recommendation(s)</th>
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<tbody>
<tr>
<td>Directly measure fibroid incidence and growth in African American women</td>
<td>Observational prospective design</td>
<td>Community setting</td>
<td>Independent variable: Transvaginal ultrasound  &lt;br&gt; Dependent variable: Presence or absence of uterine fibroids</td>
<td>The presence or absence of uterine fibroids was measured at the initial transvaginal ultrasound. Changes in size of fibroids were determined at 18 months follow-up ultrasound. The development of new fibroids was determined</td>
<td>Data were analyzed utilizing statistical tests to determine confidence intervals and p-values</td>
<td>Among the 1,123 fibroid-free women with follow-up data and increased with age (P &lt; .0001), from 6% (confidence interval, 3–9) for 23- to 25-year-olds to 13% (confidence interval, 9–17) for 32- to 35-year-olds. The</td>
<td>Level II, Good quality &lt;br&gt;Study is important to practice as it provides evidence for the risk of uterine fibroids in Black women and the importance of early detection in proper management. &lt;br&gt;Strengths: The study included prospective design and use of a standardized ultrasound protocol to measure incidence</td>
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<thead>
<tr>
<th>Purpose of article or review</th>
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<th>Level of evidence (critical appraisal score) / Worth to practice / Strengths and weaknesses / Feasibility / Conclusion(s) / Recommendation(s)</th>
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<tbody>
<tr>
<td>Qualitative study to characterize reasons why women delay treatment and continue to live</td>
<td>Qualitative research study design, interviews, surveys</td>
<td>( N = 60 ) women -Sample of women from urban academic</td>
<td>Subthemes: -Perception of normal -Low perception of</td>
<td>-Comparative and iterative analysis for consensus of themes -Qualitative data analysis by three study investigators -NVivo V10 (QRS)</td>
<td>More than 37% did not seek immediate treatment with severe symptoms</td>
<td>Level III, Good quality</td>
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<td>Strengths: Racial diversity of the study. Qualitative studies have 10-20</td>
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<td>Purpose of article or review</td>
<td>Design / Method / Conceptual Framework</td>
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<td>with uterine fibroids</td>
<td>Inclusion criteria</td>
<td>medical center between 2013 and June 2014.</td>
<td>risk for fibroids - Low knowledge of fibroids - Engagement in avoidance-based coping strategies - Disconnection from fibroids</td>
<td>- Cohen’s kappa coefficient used to measure inter-rater agreement for qualitative or category items</td>
<td>International) was used to assist with qualitative data management and thematic coding</td>
<td>48% had no previous knowledge of fibroids</td>
<td>participants; this study had 60 participants. Study was able to obtain rich detailed descriptions of women’s perceptions and beliefs that is difficult to acquire through quantitative methods. Weaknesses: The study required participants to be comfortable with English, which could have skewed the results. It also relied on women’s self-report of UF, causing possibility of misdiagnosis. It did not investigate cultural factors on women’s experiences with fibroids.</td>
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<td>- Reported diagnosis of symptomatic fibroids - Had fibroids removed in 12 months before study date - English speaking. Exclusion criteria: Women with cancer</td>
<td>-Women between age 25 and 55 - 61.7% AA, 25.0% Caucasian, 8.3% Hispanic, 5.0% Asian</td>
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<td>62% did not believe they were at risk for UF 55% were just dealing with symptoms and engaged in avoidance-based coping strategies. 28% dissociated or distance themselves</td>
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<td>Purpose of article or review</td>
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<td>Categorize symptom burden, patient awareness, and treatment decision-making for fibroids, including comparison to women of different backgrounds.</td>
<td>Quantitative Research Study Design Questionnaires: - UFS-QOL questionnaire - AMSS questionnaire Inclusion Criteria: - At-risk cohort - Diagnosed cohort</td>
<td>Online between June 30 and September 6, 2016. - Female over 18 years recruited via email members of the GfK Knowledge</td>
<td>Uterine fibroids (UF) benign pelvic noncancerous tumors in women - At-risk cohort have risk factors for developing UF - Diagnosed cohort have UF - Hysterectomy cohort</td>
<td>At-risk cohort ( N = 300 ) Diagnosed cohort ( N = 871 ) Hysterectomy cohort ( N = 272 )</td>
<td>Analysis SPSS statistics - Standard deviation as the measure of dispersion - Sub analyses for race and ethnicity and annual income - 0.10 significance level using</td>
<td>9% of women had diagnosis of UF higher than 2009 survey, which was 6.9% - App. 11 million women - 71% tried some pharmacology treatment. - 49% heard of UF</td>
<td>Level III, Good quality</td>
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</table>

Conclusion: There is a need for both patient-centered and community-based education to inform women of normal and abnormal finding with UF, symptoms and treatment options.

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<tr>
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<tbody>
<tr>
<td>- Hysterectomy cohort</td>
<td>Panel (New York, NY)</td>
<td>- Awareness and perceptions - Burden</td>
<td>overlap formulae - Tables - Graphs - Charts</td>
<td>onset mean SD 29.7 - Hispanic women high severity symptom Diagnosed 73% have sought treatment 30% have undergone some form of surgery - 60% self-manage - Black women less likely to visit a provider - 3% of undiagnosed symptoms</td>
<td>Recommendations: Definitive conclusions. Sufficient sample size for women of all races. Conclusions: Women with fibroids or symptoms suggestive of fibroids experience significant distress. Half of the women in the survey did not know about the disease, especially racial minorities, and women in lower income brackets. There is need for improved awareness and education.</td>
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<td>Purpose of article or review</td>
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<td>Measurement of major variables</td>
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<td>Develop and validate a questionnaire that assesses the severity of symptoms of fibroids and the impact of these symptoms on the health-related quality of life of patients</td>
<td>The questionnaire was developed using the results of focus group discussions of women with uterine fibroids. Validation of the questionnaire was done by expert clinicians.</td>
<td>Hospital setting</td>
<td>Independent variable: Uterine fibroids in women</td>
<td>Cronbach’s alpha score was calculated for quality of life subscales on the questionnaire</td>
<td>Quantitative data analysis</td>
<td>The UFS-QOL questionnaire subscales discriminated not only from normal controls but also among leiomyomata patients with varying degrees of symptom severity.</td>
<td>Level III, Good quality</td>
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<td></td>
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<td>Dependent variable: Impact of symptoms of uterine fibroids on health-related quality of life</td>
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<td>This study is of high value to practice. It validates a tool that can be used to assess patients who are suffering from symptoms of uterine fibroids.</td>
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<td>Strength: Validation of reliability of validity of the UFS-QOL questionnaire done by study participants and expert clinicians.</td>
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<td>Weaknesses: Sample size is small. This reduces the</td>
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<th>Purpose of article or review</th>
<th>Design / Method / Conceptual Framework</th>
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<th>Data analysis</th>
<th>Study findings</th>
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<tr>
<td>Level of evidence (critical appraisal score) / Worth to practice / Strengths and weaknesses / Feasibility / Conclusion(s) / Recommendation(s)</td>
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<td>Generalizability of the study results.</td>
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<td>Feasibility: The UFS-QOL is feasible to be used in all clinical settings.</td>
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<tr>
<td>Conclusion: The UFS-QOL is a useful tool for detecting differences in symptom severity and health-related quality of life among patients with uterine leiomyomata.</td>
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<td>Recommendations: This tool should be employed whenever a woman suffers from uterine fibroids to help make decisions about her quality of life and her treatment</td>
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<td>Purpose of article or review</td>
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</table>
| Systematic review that surveys the epidemiological data of UF, incidences and prevalence. | Systematic search | Inclusion criteria: -English language studies -Between Jan 1995 – April 2015 | N = 60 publications -16 single-center studies -37 registry studies (16 Black Women Health Study) -7 other observational studies -MEDLINE and Embase database | -UF incidence -UF prevalence -UF risk factors | -Relative risks (RRs) -Odds ratio (OR) -Incident rates ratios (IRRS) -95% confidence intervals (CIs) | Qualitative data analysis | -Incidence of UF were 217-3,745 cases per 100,000 women. Highest in Black women. -The prevalence of UF was varied from 4.5% - 68.6% -Over 30 risk factors examined Black race was the only factor that was recurrent to increase risk of UF | Level V, Good quality

Strengths:
Comprehensive literature search to ensure data were extracted without bias. Reporting in registry and observational studies was good.

Weaknesses:
Information on UF prevalence came from single-center studies with populations that were not representative of the general population. Half of the studies relied on self-report and may have been affected by recall bias. All studies were
<table>
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<th>Purpose of article or review</th>
<th>Design / Method / Conceptual Framework</th>
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<th>Major variables studied with definitions</th>
<th>Measurement of major variables</th>
<th>Data analysis</th>
<th>Study findings</th>
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<tbody>
<tr>
<td>To analyze the influence of racism on the access and use of reproductive services by Black women</td>
<td>Qualitative collaborative design</td>
<td>Community setting</td>
<td>Independent variable: Experience of racism</td>
<td>Themes were developed based on participants’ accounts of the impact of racism</td>
<td>Conducted by researchers to develop themes</td>
<td>Structural racism impacts the ability of Black women to afford reproductive health care services. Individual racism prevents Black women from seeking reproductive care services.</td>
</tr>
</tbody>
</table>


Conclusion: The risk factor with the strong evidence is Black race. The disease disproportionately affects Black women.
<table>
<thead>
<tr>
<th>Purpose of article or review</th>
<th>Design / Method / Conceptual Framework</th>
<th>Sample / Setting</th>
<th>Major variables studied with definitions</th>
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<td>Strengths: Utilized a collaborative approach in the community, which helped to determine the effect of racism on members of the community.</td>
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<td>Weaknesses: No weaknesses were identified in this study.</td>
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<td>Feasibility: Feasible to use study findings in all healthcare settings.</td>
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<td>Conclusion: Racism can be structural or individual. Both forms of racism prevent Black women from utilizing</td>
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<td>Purpose of article or review</td>
<td>Design / Method / Conceptual Framework</td>
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<tr>
<td>To identify factors that shape Black women's fibroid management decisions; explore how discrimination based on race, class, and...</td>
<td>Semi-structured interviews</td>
<td>37 women undergoing surgery for fibroid management</td>
<td>Independent variables: Socioeconomic status, support from social networks, fertility consequences, and fear of fibroid malignancy</td>
<td>Variables measured using semi-structured interviews</td>
<td>Thematic analysis was performed to code transcripts and identify themes</td>
<td>Women of higher socioeconomic status had higher awareness of fibroids than women of lower socioeconomic status.</td>
</tr>
<tr>
<td>Purpose of article or review</td>
<td>Design / Method / Conceptual Framework</td>
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<td>gender feature in treatment-seeking experiences; and compare experiences across age and socioeconomic status.</td>
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Dependent variable: Fibroid management decisions

Mistrust of medical providers influenced participants’ decisions.

know what to emphasize when dealing with specific patients.

Strengths: The study interacted directly with patients with uterine fibroids to determine the factors that influenced their decision-making process.

Weaknesses: Sample size is small. The influence of other factors on decision-making may not have been analyzed, and this reduces the impact of the study findings.

Feasibility: The findings of this study
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<tr>
<th>Purpose of article or review</th>
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<td>can be used in all healthcare settings</td>
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<td>Conclusion: Fibroid management decisions are influenced by multiple factors, including interactions with clinicians and social networks, concerns about fertility and fibroid malignancy, and social and historical conditions.</td>
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<td>Recommendations: Clinicians should deliver intersectional gynecologic care that respects the voices and fears of Black women.</td>
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<td>Purpose of article or review</td>
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<td>------------------------------------------</td>
<td>-------------------------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>To conduct a Chinese translation and cultural adaptation of the UFS-QOL questionnaire to determine its reliability, validity, and responsiveness</td>
<td>223 Chinese women aged 18 and older with uterine fibroids</td>
<td>Hospital setting</td>
<td>Independent variable: Uterine fibroids in women</td>
<td>Cronbach's alpha coefficients ranged from 0.706 to 0.937 intra-class correlation coefficients</td>
<td>Quantitative data analysis</td>
<td>There were positive correlations between health-related quality of life scores of Chinese UFS-QOL and the corresponding subscales of the Short-Form Health Survey-12. Responsiveness was shown by reduction of symptom severity scores and improvement of health-related quality of life scores after treatment.</td>
</tr>
</tbody>
</table>


Level of evidence (critical appraisal score) / Worth to practice / Strengths and weaknesses / Feasibility / Conclusion(s) / Recommendation(s)
<table>
<thead>
<tr>
<th>Purpose of article or review</th>
<th>Design / Method / Conceptual Framework</th>
<th>Sample / Setting</th>
<th>Major variables studied with definitions</th>
<th>Measurement of major variables</th>
<th>Data analysis</th>
<th>Study findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weaknesses: No weaknesses identified.</td>
<td>Feasibility: The UFS-QOL is feasible to be used in all clinical settings.</td>
<td>Conclusion: The UFS-QOL is a useful tool for detecting differences in symptom severity and health-related quality of life among patients with uterine leiomyomata.</td>
<td>Recommendations: This tool should be employed whenever a woman suffers from uterine fibroids to help make decisions about her quality of life and her treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix C. Health Belief Model Concepts

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Concept Definition</th>
<th>Interventions Strategy to Influence Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived susceptibility</td>
<td>Beliefs about the likelihood of getting a disease or condition</td>
<td>Define population(s) at risk and risk, and levels. Personalize risk based on person's individual characteristics or behaviors. Make an individual's perceptions more consistent with his or her actual risk.</td>
</tr>
<tr>
<td>Perceived severity</td>
<td>Beliefs about the seriousness of contracting a disease or condition, including consequences</td>
<td>Specify consequences of risks and conditions. Trigger emotions like distress and regret with images.</td>
</tr>
<tr>
<td>Perceived benefits</td>
<td>Beliefs about the positive aspects of adopting a health behavior (e.g., efficacy of the behavior for reducing risk or serious consequences)</td>
<td>Shift individual's perspective by highlighting others' beliefs about the behavior and its effects. Provide knowledge and arguments in favor of the behavior.</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>Beliefs about obstacles to performing a behavior and the negative aspects (both tangible and psychological costs) of adopting a health behavior</td>
<td>Identify and reduce perceived barriers through reassurance, correction of misinformation, incentives, and assistance.</td>
</tr>
<tr>
<td>Cues to action</td>
<td>Internal or external factors that could trigger the health behavior</td>
<td>Promote awareness. Use appropriate reminder and recall systems.</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Beliefs that one can perform the recommended health behavior (confidence)</td>
<td>Provide training and guidance in performing the recommended action. Use progressive goal setting. Give verbal reinforcement.</td>
</tr>
</tbody>
</table>
Appendix: D

4-Process Step Intervention

<table>
<thead>
<tr>
<th>Steps</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| 1<sup>st</sup> Meetings            | ▪ Meeting with clinic providers to discuss the project's significance to black women and explore ways the project could improve the health outcomes of this population.  
▪ A training session for providers and medical assistants on the UFS-QOL questionnaire.  
▪ Meeting with two gynecologists to learn more knowledge about uterine fibroids and treatment options |
| 2<sup>nd</sup> Project Outreach     | ▪ A black people's church in Ontario, California, was visited and talked to the church leader about the project and requested that it be mentioned during one of the services.  
▪ Visited several black women's salons, educated the hairdressers about the importance of screening for fibroids, and encouraged them to spread the word to their friends.  
▪ Made posts about the project on various black women's groups on social media and pages urging them to contact the clinic to be screened for the disease. |
| 3<sup>rd</sup> Scheduling for Screening for appointments | ▪ Medical assistants called the women who submitted their numbers to make an appointment.  
▪ Phone call reminder before the day of the scheduled appointment. |
| 4<sup>th</sup> Screening and Education about UF. | ▪ A poster was posted in the clinic waiting room with information about fibroids.  
▪ Education about uterine fibroids is given before and after screening.  
▪ USF DNP student conducted fibroid symptom screening using the UFS-QOL questionnaire twice weekly. |
Appendix: E

Education Poster
UTERINE FIBROIDS
What are these?
Uterine fibroids are noncancerous growths of the uterus.

**SYMPTOMS**
- Abdominal/pelvic pain
- Low back pain
- Constipation
- Infertility
- Heavy/long menstruation
- Iron deficiency anemia

**RISK FACTORS**
- High levels of estrogen & progesterone
- Breastfeeding, pregnant, & perimenopausal individuals
- Nulliparous individuals

**TREATMENT**
- Uterine artery embolization
- MR-guided focused ultrasound surgery
- Surgical removal of tumor
- Hysterectomy
- Medications

**SCHEDULE FOR FIBROIDS SYMPTOMS SCREENING IN THIS CLINIC**
PriMer Healthcare Family Clinic
24950 Redlands Blvd, Suite F
Loma Linda, California 92354
Call: 909-283-4033
Appendix: G

UFS-QOL QUESTIONNAIRE

APPENDIX A

Pt. Initials: __________ Pt. ID: __________
Date: __________

UTERINE FIBROID SYMPTOM AND HEALTH-RELATED QUALITY OF LIFE QUESTIONNAIRE (UFS-QOL)

Listed below are symptoms experienced by women who have uterine fibroids. Please consider each symptom as it relates to your uterine fibroids or menstrual cycle. Each question asks how much distress you have experienced from each symptom during the previous 3 months.

There are no right or wrong answers. Please be sure to answer every question by checking (✓) the most appropriate box. If a question does not apply to you, please mark "not at all" as a response.

<table>
<thead>
<tr>
<th>During the previous 3 months, how distressed were you by...</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Somewhat</th>
<th>A great deal</th>
<th>A very great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Heavy bleeding during your menstrual period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Passing blood clots during your menstrual period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Fluctuation in the duration of your menstrual period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>compared to your previous cycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Fluctuation in the length of your monthly cycle</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>compared to your previous cycles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Feeling tightness or pressure in your pelvic area</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6. Frequent urination during the daytime hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Frequent nighttime urination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Feeling fatigued</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix H. Gap Analysis

**Current State**
- The number of black women with uterine fibroids continues to increase.
- Minimal fibroid symptoms screening is conducted in the clinic.
- Women are self-managing the symptoms.

**Gap**
- Some black women do not know about uterine fibroids.
- There is no fibroid screening tool to detect symptoms early.
- Methods of identifying gaps

**Literature review.**
- Interviews with black women.

**Desired State**
- Black women aged 21 -60 will be screened for Uterine Fibroids symptoms.
Appendix I. Gantt Chart

Fall 2021
- Identifying and selecting the problem
- Literature research
- Meeting with advisor
- Meeting with Black women

Spring 2022
- Literature review
- Writing project integrated review
- Meeting with directors at the clinic
- Visiting the clinic neighborhood
- Presentation of the integrated review

Summer 2022
- Writing of the manuscript
- Visiting different women clinics

Fall 2022
- Identifying Gaps
- Writing the project prospectus/proposal
- Meeting with project chairperson

Summer 2023
Implementation of the project
Writing DNP project
Appendix J. Work Breakdown Structure

Screening for Uterine Fibroids in Black Women

Identification of the Problem
- Literature research
- Assessment of the problem
- Selection of the problem
- Discussion with advisor about the selection
- Formulation

Planning
- Aim of the project
- Methodology
- Intervention
- Clinic Selection
- Stakeholders
- Budget

Analysis
- Gap analysis
- Conceptual Framework
- SWOT
- Internal factors
- External factors
- Literature Analysis

Implementation
- Educate providers, medical assistants about the screening tool.
- Visit black neighborhoods
- Educate providers
- Screen for UF symptoms using UF questionnaire

Evaluation
- Data collection
- Analysis data
- Evaluation of interventions
- Results
- Outcomes
Appendix: K Responsibility / Communication Matrix

<table>
<thead>
<tr>
<th>Communication</th>
<th>Frequency</th>
<th>Goal</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Advisor</td>
<td>Weekly</td>
<td>Discuss selected health problem, share ideas of implementing the project, updates.</td>
<td>Zoom, email.</td>
</tr>
<tr>
<td>Project Chairperson</td>
<td>Bi-weekly</td>
<td>Manuscript feedback and prospectus progress, project implementation, results analysis.</td>
<td>Phone call, face-to-face, Zoom.</td>
</tr>
<tr>
<td>Clinic Directors</td>
<td>Four Times</td>
<td>Project proposal, approval, and screened participants healthcare insurance.</td>
<td>Face-to-face, phone call.</td>
</tr>
<tr>
<td>Black Women</td>
<td>Weekly</td>
<td>Education and awareness about uterine fibroids.</td>
<td>Phone call, face-to-face</td>
</tr>
<tr>
<td>Gynecologists</td>
<td>Thrice</td>
<td>Treatment options and acceptable methods of payment.</td>
<td>Face-to-face, phone call.</td>
</tr>
</tbody>
</table>
## Appendix L. SWOT Analysis

### INTERNAL FACTORS

<table>
<thead>
<tr>
<th>STRENGTHS (+)</th>
<th>WEAKNESSES (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-based interventions</td>
<td>Trouble setting meetings with the providers</td>
</tr>
<tr>
<td>Location of the clinic</td>
<td>Black women resistance to be screened</td>
</tr>
<tr>
<td>A simple screening questionnaire</td>
<td>Lack of healthcare insurance</td>
</tr>
<tr>
<td>Clinic accepts all kinds of Insurance</td>
<td>No transportation to visit the clinic</td>
</tr>
<tr>
<td>Support and approval of the project</td>
<td>Knowledge deficit</td>
</tr>
<tr>
<td>Project conducted by DNP Student</td>
<td></td>
</tr>
</tbody>
</table>

### EXTERNAL FACTORS

<table>
<thead>
<tr>
<th>THREAT (-)</th>
<th>OPPORTUNITIES (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bearing the cost of uninsured</td>
<td>Early detection of the disease</td>
</tr>
<tr>
<td>Staffing shortage</td>
<td>Education about the disease</td>
</tr>
<tr>
<td>Assigned two days to screen</td>
<td>Improve clinical management of the disease</td>
</tr>
<tr>
<td>Failure to follow-up</td>
<td>Increased awareness of the disease</td>
</tr>
</tbody>
</table>
Appendix: M

Budget

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic visit for uninsured</td>
<td>$75 \times 8 = 600</td>
</tr>
<tr>
<td>Lunch</td>
<td>$200</td>
</tr>
<tr>
<td>Printing education material</td>
<td>$20</td>
</tr>
<tr>
<td>Transportation</td>
<td>$80</td>
</tr>
<tr>
<td>Total</td>
<td>$900</td>
</tr>
</tbody>
</table>
Appendix: N

Cost-Effective Analysis

Screening For UFs Program

- Cost of implementation = Screening for fibroid symptoms $0 + confirm diagnosis with Pelvic Ultrasound $500 + Six Months Treatment with brand name drugs $1,200 = $1,700

Cost Averted = Treatment with surgery $20,000 + Missed workdays $25,229 = $45,229

- Net Cost $1,700 - $45,229 = -$43,529 (negative value means cost savings)
- Cost-effectiveness ratio = Net costs/change in health outcome

Change in health outcome = 10 surgery cases averted

Net Cost = $43,529

CE ratio = 43,529 / 10 = $4,352.9 per surgical case averted
Appendix: O. Statement of Non-Research Determination

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

General Information

Last Name: Kagendo                First Name: Winnie
CWID Number: 20543141
Semester/Year: Fall 2022
Course Name & Number: NURS – 749B – M2

Chairperson Name: Dr. Trinette Radasa
Advisor Name: Dr. Trinette Radasa
Second Reader Name: Dr. Elena Capella

Project Description

1. Title of Project: Screening for Uterine Fibroids in Black Women

2. Brief Description of Project (Clearly state the purpose of the project and the problem statement in 250 words or less):

Uterine fibroids (UFs) are defined by the American College of Obstetricians and Gynecologists as benign noncancerous growths that develop from the muscle tissue of the uterus. Fibroid symptoms include heavy, prolonged menstrual bleeding, pain, and dyspareunia. Additionally, women may suffer from constipation, urinary incontinence, or retention, as fibroids may cause bowel or bladder dysfunction. Although not life-threatening, these symptoms can
negatively affect a woman's quality of life. Studies have shown that fibroids disproportionately affect black women. Black women have a two- to a threefold higher risk of developing UF than white women, with an incidence three times higher than in other populations. Despite the higher incidence of fibroids in black women, little is being done in outpatient clinics to manage these bothersome tumors in black women. Reports have shown black women unpleasant experiences in seeking treatment. This DNP project aims to implement a screening tool known as Uterine Fibroid Symptom and Health-Related Quality of Life (UFS-QOL) questionnaire to screen for the disease in black women at PriMer Healthcare Family clinic and eventually in other women's clinics. In addition, educate providers about the prevalence of the disease in black women.

3. **AIM Statement: What are you trying to accomplish?**

- Provides clear, well-defined, and concise statement regarding the purpose of the project and describes the specific aim in the IHI format: What?; How much?; For whom?; Where?; By when? The Aim Statement needs to follow the SMART guidelines: specific, measurable, achievable, realistic, and timely.
- To improve (your process) from (baseline)% to (target)% by (timeframe), among (your specific population)

*Complete the AIM statement by answering the following elements:*

**What?**: Will early screening for uterine fibroids and educating providers about the disease**

**Improve the clinical management of the disease**

**How much improvement?**: From 75% to 25%

**For whom?**: In black women

**Where?**: At PriMer Health Family Clinic

**By when?**: In 5 months?

4. **Brief Description of Intervention (150 words):**

The intervention for this project is to screen for uterine fibroids in black women at primary care clinic, starting at PriMer Healthcare Facility. The UFS-QOL questionnaire has eight fibroid symptom questions and 29 health-related quality-of-life questions. The
questionnaire will be modified to assess for UF symptoms at PriMer Health Family Clinic. I also plan to create educational Pamphlets for fibroids and schedule brief meetings with small groups of providers at their convenience.

4a. How will this intervention be implemented?

- Where will you implement the project? PriMer Healthcare Family Clinic
- Attach a letter from the agency with approval of your project.
- Who is the focus of the intervention? (Needs to match population [for whom?] in Aim statement.) Black Women
- How will you inform stakeholders/participants about the project and the intervention? Through phone calls, emails, and face to face meeting.

5. Outcome measurements: How will you know that a change is an improvement?

- Measurement over time is essential to QI. Measures can be outcome, process, or balancing measures. Baseline or benchmark data are needed to show improvement.
- Align your measure with your problem statement and aim.
- Try to define your measure as a numerator/denominator.
- What is the reliability and validity of the measure? Provide any tools that you will use as appendices.
- Describe how you will protect participant confidentiality.

To measure the outcome, data will consist of.

I. Descriptive data on patient's age and race.
II. The proportion of patients screened for UF within the five months visit post-implementation
III. The proportion of patients diagnosed with UF within five months visit post-implementation
  ❖ Measure as numerator/denominator = number of patients diagnosed with UF/ number of patients screened.
  ❖ To test the reliability of the questionnaire, I will use the Test-Retest reliability method. The participants will answer the same questions twice at different visits and establish I will establish a correlation between the two sets.
  ❖ To measure validity, I will use the content validity approach by having providers validate the questions in the UFS-QOL screening tool questionnaire.
  ❖ Data will be collected anonymously to ensure patient confidentiality. The data will store in a password-secured folder or drive, and the information will be deleted after use.
Mark an “X” under “Yes” or “No” for each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of the project is to improve the process or delivery of care with established/accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The specific aim is to improve performance on a specific service or program and is a part of usual care. All participants will receive standard of care.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project is not designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does not follow a protocol that overrides clinical decision-making.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment, or evaluation of the organization to ensure that existing quality standards are being met. The project does not develop paradigms or untested methods or new untested standards.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does not seek to test an intervention that is beyond current science and experience.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project has no funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/or patients.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: “This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.”</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Answer Key:**

- If the answer to all of these items is “Yes”, the project can be considered an evidence-based activity that does not meet the definition of research. IRB review is not required. Keep a copy of this checklist in your files.
- If the answer to any of these questions is “No”, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: [http://answers.hhs.gov/ohrp/categories/1569](http://answers.hhs.gov/ohrp/categories/1569)
DNP Statement of Determination

Evidence-Based Change of Practice Project Checklist Outcome

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐ This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

Student Last Name: Kagendo
Student First Name: Winnie
Student Signature: Winnie Kagendo
Date: 09/04/2022

Chairperson Name: ____________________________
Chairperson Signature: ____________________________
Date: ____________________________

Second Reader Name: ____________________________
Second Reader Signature: ____________________________
Date: ____________________________

DNP SOD Review Committee Member Name: ____________________________
DNP SOD Review Committee Member Signature: ____________________________
Date: ____________________________
Uterine Fibroid Symptom and Health-Related Quality of Life Questionnaire (UFS-QoL)

Pt. Initials: ___________  Pt. ID: ___________
Date: ______________

UTERINE FIBROID SYMPTOM AND HEALTH-RELATED QUALITY OF LIFE QUESTIONNAIRE (UFS-QOL)

Listed below are symptoms experienced by women who have uterine fibroids. Please consider each symptom as it relates to your uterine fibroids or menstrual cycle. Each question asks how much distress you have experienced from each symptom during the previous 3 months.

There are no right or wrong answers. Please be sure to answer every question by checking (√) the most appropriate box. If a question does not apply to you, please mark "not at all" as a response.

<table>
<thead>
<tr>
<th>During the previous 3 months, how distressed were you by...</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Somewhat</th>
<th>A great deal</th>
<th>A very great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Heavy bleeding during your menstrual period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Passing blood clots during your menstrual period</td>
<td></td>
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</tr>
<tr>
<td>3. Fluctuation in the duration of your menstrual period compared to your previous cycle</td>
<td></td>
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</tr>
<tr>
<td>4. Fluctuation in the length of your monthly cycle compared to your previous cycles</td>
<td></td>
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<td>5. Feeling tightness or pressure in your pelvic area</td>
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<tr>
<td>6. Frequent urination during the daytime hours</td>
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<tr>
<td>7. Frequent nighttime urination</td>
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<td></td>
</tr>
<tr>
<td>8. Feeling fatigued</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
To calculate a symptom score for symptom severity, create a summed score from the items listed below and then use the formula below the table to transform the value. This will provide symptom scores where higher score values are indicative of greater symptom severity or bother and lower scores will indicate minimal symptom severity (high scores = bad).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Sum Item Values</th>
<th>Lowest and Highest Possible Raw Scores</th>
<th>Possible Raw Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom Severity</td>
<td>Sum 1 – 8</td>
<td>8, 40</td>
<td>32</td>
</tr>
</tbody>
</table>

**Transformation for Symptom Severity raw scores ONLY:**

\[
\text{Transformed Score} = \frac{(Actual \ raw \ score \ - \ lowest \ possible \ raw \ score)}{Possible \ raw \ score \ range} \times 100
\]

For the HRQL subscales (concern, activities, energy/mood, control, self-conscious, and sexual function), create summed scores of the items listed below for each individual subscale. To calculate the HRQL total score, sum the value of each individual subscale (do not sum individual items). Use the formula below the table to transform all values. Higher scores will be indicative of better HRQL (high = good).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Sum Item Values</th>
<th>Lowest and Highest Possible Raw Scores</th>
<th>Possible Raw Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern</td>
<td>9+15+22+28+32</td>
<td>5, 25</td>
<td>20</td>
</tr>
<tr>
<td>Activities</td>
<td>10+11+13+19+20+27+29</td>
<td>7, 35</td>
<td>28</td>
</tr>
<tr>
<td>Energy/mood</td>
<td>12+17+23+24+25+31+35</td>
<td>7, 35</td>
<td>28</td>
</tr>
<tr>
<td>Control</td>
<td>14+16+26+30+34</td>
<td>5, 25</td>
<td>20</td>
</tr>
<tr>
<td>Self-conscious</td>
<td>18+21+33</td>
<td>3, 15</td>
<td>12</td>
</tr>
<tr>
<td>Sexual function</td>
<td>36+37</td>
<td>2, 10</td>
<td>8</td>
</tr>
<tr>
<td>HRQL TOTAL</td>
<td>Sum of 6 Subscale Scores</td>
<td>29, 145</td>
<td>116</td>
</tr>
</tbody>
</table>

**Formula for transformation of HRQL raw scores ONLY:**

\[
\text{Transformed Score} = \frac{(Highest \ possible \ score \ - \ Actual \ raw \ score)}{Possible \ raw \ score \ range} \times 100
\]

**Missing Items**

For the subscale analyses, if < 50% of the scale items are missing, the scale should be retained with the mean scale score of the items present used to impute a score for the missing items. If ≥ 50% of the items are missing, no scale score should be calculated, the subscale score should be considered missing. If a subscale score is missing, the HRQL total cannot be calculated.
Appendix: P

Questionnaire Scoring Manual

APPENDIX B
UFS-QoL Scoring Manual

To calculate a symptom score for symptom severity, create a summed score from the items listed below and then use the formula below the table to transform the value. This will provide symptom scores where higher score values are indicative of greater symptom severity or bother and lower scores will indicate minimal symptom severity (high scores = bad).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Sum Item Values</th>
<th>Lowest and Highest Possible Raw Scores</th>
<th>Possible Raw Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom Severity</td>
<td>Sum 1 – 8</td>
<td>8, 40</td>
<td>32</td>
</tr>
</tbody>
</table>

Transformation for Symptom Severity raw scores ONLY:

Transformed Score = \[
\frac{(\text{Actual raw score} - \text{lowest possible raw score})}{\text{Possible raw score range}} \times 100
\]

Example:
Patient is 32 years old. Out of the 8 symptoms each graded on a scale of 1-5 she scored 38.

Using the above formula

\[
\frac{\text{Actual score (38)} - \text{lowest possible score (8)}}{\text{Possible raw score range (32)}} \times 100 = 93.8\%
\]

Any scores above 40% were considered a possibility of uterine fibroids.