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Managing Menopausal Symptoms Through Exercise and Dietary Changes

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Abstract

Background: The most critical aging stage for women is the menopausal transition period, which causes various symptoms such as hot flashes, night sweats, sleeping disturbance, and mood swings that lower women's quality of life. Menopausal symptoms that are not managed can exacerbate severe medical conditions such as cardiovascular disease, bone illnesses, neurological diseases, and psychosocial problems. As the first non-pharmacological treatment for menopausal syndrome, several studies have shown that regular exercise and diet control can potentially improve menopausal symptoms and the quality of life.

Purpose: This project aimed to examine the effect of improving the quality of life by reducing menopausal symptoms through regular exercise and dietary changes.

Implementation and Plan: Fifteen menopausal women between the ages of 49 and 60 were selected from a private clinic between August and September 2022. They implemented regular exercise and diet control for three months. To measure their outcomes, they also completed the Utian Quality of Life (UQoL) questionnaires, Menopausal Scale Rate (MRS), and BMI comparisons before and after exercise and diet changes.

Evaluation of Outcomes: The Menopause Symptoms Rate Scale (MRS) increased by 24% after regular exercise and diet control, the Utian of Quality of Life increased by 6%, and rare change in BMI for three months.

Conclusion: Regular exercise and diet control helped reduce some menopausal symptoms, particularly hot flashes and mood swings, which helped improve their quality-of-life ratings. There is some evidence to support the EBP project on Hormone Therapy and lifestyle

modifications to improve higher quality of life during the menopausal period. Future EBP projects should focus on a longer duration and a larger patient group.

Keywords – Menopause symptoms, climacterics syndrome, quality of life, lifestyle changes, exercise, menopause diet, overweight.

Introduction

The permanent end of the menstrual cycle is called menopause (Nguyen, 2020). The period of slow progression that begins with changes in the menstrual cycle can be called the premenopausal stage, and various symptoms usually last more than four years and can be longer than ten years (Zhang et al., 2020). The changes associated with menopause are affected physical, mental, and women's quality of life. Symptoms associated with menopause include hot flashes, sleep disturbances, mood disorder, sexual dysfunction, and a decline in cognitive function can lead to other diseases and decrease the quality of life. With these varying symptoms, menopausal women seek various ways to overcome them. The World Health Organization estimated that postmenopausal women are growing and living longer, with women aged 60 years in 2019 expected to live another 21 years. Considering this viewpoint, menopause can present a significant opportunity to reevaluate one's health, way of life, and objectives.
As a first-choice management method with non-hormonal intervention, exercise and diet changes have been proven effective through several studies showing the positive benefits of exercise and diet change education for the quality of life in menopausal women and the relief of menopausal symptoms (Asghari et al.,2016). This evidence-based project aims to improve the quality of life for menopausal women by reducing menopausal symptoms through regular exercise and diet changes.

Project Background

The Journal of the North American Menopause Society reported that women who experience menopause symptoms have a lower quality of life and are more likely to seek medical specialists, resulting in higher medical expenses and lower work productivity. As the first step in diagnosing and managing menopause, primary care providers must conduct screenings

(Aggarwal, 2022). Multiple studies have suggested that non-pharmacological methods, such as maintaining a healthy diet and engaging in regular exercise, have effectively treated menopausal symptoms in primary care settings. Therefore, it is essential for primary care providers to receive adequate training in the management of menopause and offer resources and support for lifestyle interventions to promote better health and well-being among women (Pinkerton, 2015)

The Menopause Rating Scale (MRS) is a validated self-administered scale commonly used to measure the severity of menopausal symptoms. It has been utilized in various clinical, epidemiological, and menopause symptom-related research studies. Its 11 components are divided into three subscales: somatic signs (flush, palpitations, insomnia, and muscle and joint problems), psychological symptoms (irritation, anxiety, and physical and mental fatigue associated with depression), and urogenital symptoms (bladder problems, sexual dysfunction, and vaginal dryness). The severity of each of the 11 symptoms is scored on a scale ranging from 0 (no complaint) to 4 (very severe complaint). (Armo, M., & Sainik, S., 2020). A tool was developed to evaluate climacteric symptoms and the response to therapy, which is seen as an improvement over the Kupperman Index. The tool has a retest reliability of 0.60 for the total score and 0.84-0.89 for each domain. The internal consistency of each domain is acceptable, with a Cronbach α coefficient of 0.65-0.87 (Ceylan, B., & Özerdoğan, N., 2015).

The Utian Quality of Life scale (UQOL) is a tool that aims to assess an individual's health-related quality of life, as opposed to just menopausal symptoms. The UQOL consists of 23 items divided into four domains: occupational, health, emotional, and sexual, with seven items in each category. The UQOL has good retest reliability, with a score of 0.89 for the total score and 0.77-0.88 for each domain. The internal consistency of the UQOL is also acceptable, with a Cronbach α coefficient of 0.83 for the total score and 0.64-0.84 for each domain.

However, the UQOL's validity and reliability are limited in some respects (Ceylan, B., & Özerdoğan, N. 2015).

While this project's review of BMI related to exercise and dietary change showed minimal change, it may be due to the EBP project being short-term. Nonetheless, various studies have demonstrated that a successful obesity treatment plan necessitates a culturally sensitive approach to lifestyle and behavior modifications, as well as an assessment of eligibility for medication and surgery. Nutrition is crucial for weight loss and maintenance, with dietary changes requiring safety, tolerability, affordability, nutritional adequacy, cultural acceptability, and sustainability. Furthermore, physical activity is indispensable (Fenton, 2021).

Translation of Evidence

Author(s) **Name of article**	**Evidence Ranking (use Melnyk pyramid)**	**Summary of Evidence – key bullet points**
Effect of aerobic exercise and nutrition education on quality of life and early menopause symptoms: A randomized controlled trial. Asghari et al., (2016)	Level I	▪ This article is a randomized trial study on doing education and exercise programs to improve menopausal symptoms. ▪ The result has shown that Nutrition education with aerobic exercise can improve quality of life.
Exercise and Quality of Life in Women with Menopausal Symptoms: A Systematic Review	Level III	▪ Menopausal symptoms are often associated with the deterioration in

and Meta-Analysis of Randomized Controlled Trials Nguyen et al., (2020)		physical, mental, and sexual health, lowering women's quality of life (QoL). ▪ This study's objective is to examine the effect of exercise on the QoL in women with menopausal symptoms. ▪ This study found much evidence for the positive effects of exercise on menopausal women, but only in improving the physical and psychological QoL scores in women with menopausal symptoms. ▪ Further research is needed to deeply examine the effect of exercise on QoL in menopausal women in other areas, such as psychological, sexual, and vasomotor symptoms.
The impact of menopausal symptoms on quality of life, productivity, and economic outcomes. Whiteley et al., (2013)	Level IV	▪ The study reported that women who experienced menopausal symptoms between the ages of 40 and 65 had significantly lower quality of life. ▪ Significantly higher social work disabilities than women without

		menopausal symptoms, resulting in increased economic burden. ▪ Higher medical utilization for especially depression, anxiety, and joint stiffness were the symptoms most closely related to health outcomes.
Complementary and Alternative Medicine (CAM) for Menopause Johnson, A., Roberts, L., & Elkins, G. (2019).	Level I	▪ This article critically reviews the literature on Complementary and Alternative Medicinal (CAM) treatments for menopausal symptoms. ▪ CAM treatments that help with emotional stability, support various nutritional supplements (i.e., herbs), and increase exercise has shown to be effective in improving vasomotor symptoms without any hormonal therapy
A dietary intervention for vasomotor symptoms of menopause: a randomized, controlled trial. Barnard et al., (2023).	Level III	▪ Lowering dietary fat reduced hot flashes-free after a year. Due to their high fiber and low-fat content, soy isoflavones, daidzein, and genistein may be more effective against vasomotor symptoms. These compounds exhibit estrogen-agonist and estrogen-antagonist effects.

		▪ There were reductions in the Menopause-Specific Quality of Life questionnaire vasomotor, physical, and sexual domains.

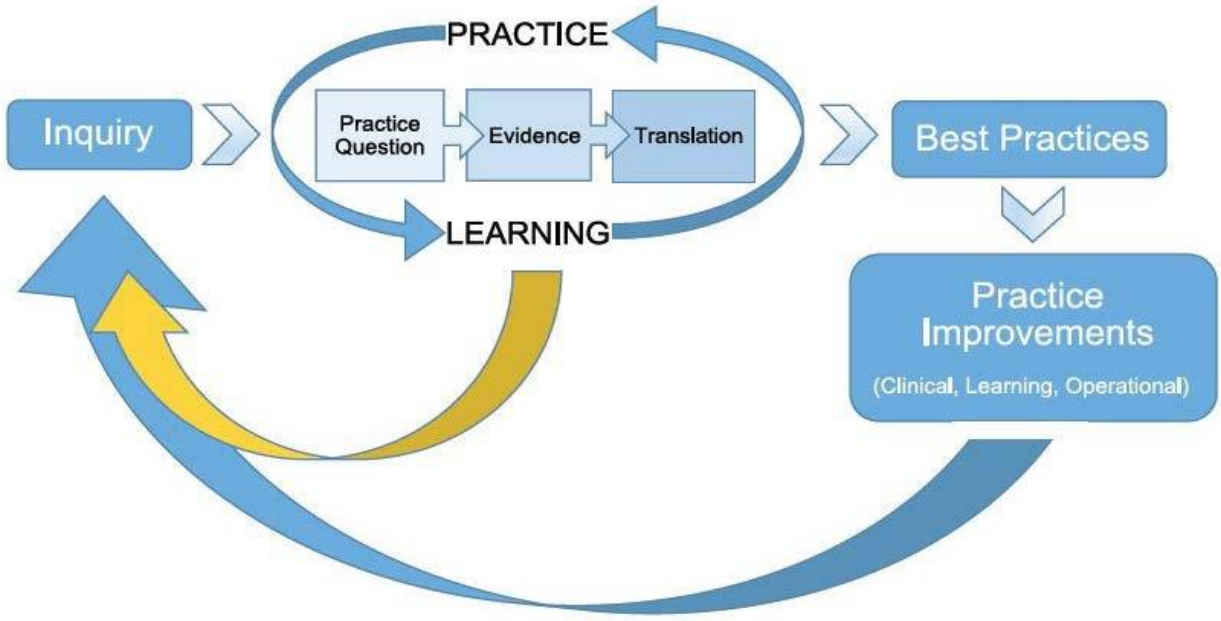
These articles indicate that combining nutrition education and aerobic exercise can enhance the quality of life for women experiencing menopausal symptoms. Additionally, they highlight those women in the 40-65 age range with menopausal symptoms have a lower quality of life. They are more likely to experience social work disabilities and medical issues such as depression, anxiety, and joint stiffness. Research suggests that exercise and a healthy diet can help improve menopausal symptoms.

Evidence-Based Model/Framework

The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Model serves as the framework for this project. Aimed at closing the gap between nursing knowledge and practice by applying research in real-world situations, the model acknowledges problems and searches for evidence that can be translated into practice through practice, evidence, and translation (PET). By integrating the best scientific evidence and effective methods, the JHNEBP model considers internal and external factors to guide enhancing patient care and quality of life (Friesen et al., 2017).

The JHNEBP model is particularly suitable for this project because menopausal syndrome and care involve numerous variables and factors that must be considered when determining the most effective way to manage negative symptoms. The JHNEBP model includes these factors in its approach, and its three-step plan of practice, evidence, and translation can serve as a valuable guide for research that combines clinical practice and evidence. One

significant strength of the JHNEBP model is its adaptability to various clinical settings, allowing for changes and improvements to practice. It can also consider specific factors that may affect the project, such as age and previous medical history, leading to more efficient decision-making through clear evidence from research and controlling various factors. Given the wide range of factors and symptoms associated with menopause, the adaptability, and efficiency of the JHNEBP model make it a suitable fit for managing this condition (Melnyk & Fineout-Overholt.,2019).



Project Process

Before the project was implemented, the University of San Diego Institutional Review Board approval was sought. The project enrolled 15 women aged 49 to 60 with natural menopause without cancer or hysterectomy who were seen at a primary care clinic. Project implementation includes education on evidence-based exercise and diet change to reduce menopausal symptoms. The Menopause Rating Scale (MRS) and Utian Quality of Life questionnaires (UQoL) were used before and after project implementation to evaluate patients' symptoms and quality of life. Fifteen participants finished a preliminary evaluation and received dietary and exercise modification instructions. Monthly follow-ups followed the health and progress of the patients.

Diet Recommendations

To manage menopausal symptoms and promote overall health during this stage of life, it is recommended to follow a healthy diet. During the initial interview, participants received individualized information on specific dietary changes based on research. These changes include avoiding animal-based foods, reducing the consumption of fatty foods, and incorporating half a cup of cooked whole, non-genetically modified soybeans into daily meals. Additionally, it is recommended to eliminate or minimize the intake of gluten, sugar, dairy, and alcohol, as well as oils and fatty foods. Participants were encouraged to increase their consumption of whole grains, soybeans, berry fruits (excluding sweet fruits), and vegetables. The recommended standard drink size was also discussed, which included one glass of wine, 12 fluid ounces of beer, or 1.5 fluid ounces of 80-proof distilled spirits (Barnard et al., 2023).

Exercise Recommendations

All participants were informed of many exercise benefits in the menopause period, specifically how exercise can improve muscle mass and bone density through aerobic, strength exercise, and balance exercises and improving Menopause symptoms. Aerobic activity can help with weight loss and maintaining a healthy weight. By starting with 20 minutes for the first two weeks, two to three times a week. If stable, the patients were asked to move to 30 minutes every other day, progressively increasing the intensity and duration. Patients were advised to do strength exercises of 10-15 minutes two times weekly for weight loss, to build stronger muscles, and to burn calories more effectively. They were advised to select resistance tubing, hand weights, or weight machines and choose a weight or resistance level that would cause their muscles to ache after approximately 12 repetitions. As they get stronger, they can gradually increase their weight or resistance (Asghari,2016).

Patients were advised to stretch to help improve flexibility. They were educated on setting aside time to stretch after each workout when their muscles are warm and receptive to stretching or daily for 10 minutes in the morning and afternoon. Patients were taught balance exercises to improve stability and can help prevent falls. Some simple exercises include standing on one leg while brushing their teeth. Other activities such as Tai Chi, Yoga, and Pilates were options for the patients. (Johnson et al., 2019).

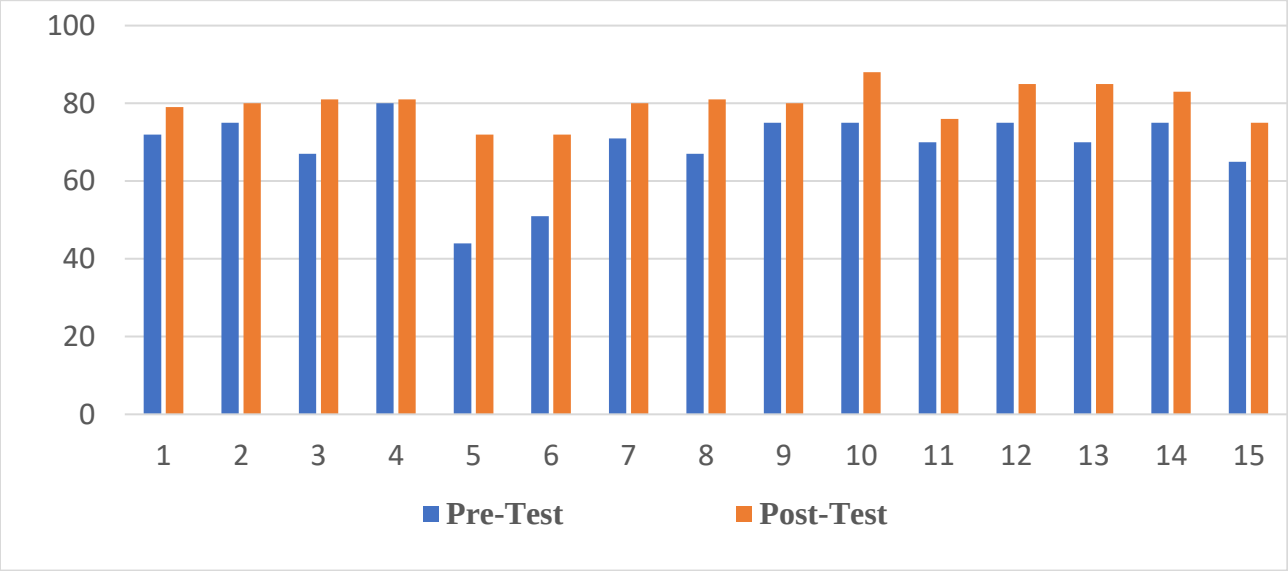
Evaluation of Outcomes

The outcome of this project has shown that regular exercise and diet control led to a 24% increase in the Menopause Symptoms Rate Scale (MRS), a 6% improvement in the Utian of Quality of Life, and minimal change in BMI over three months. The key findings indicate that hot flashes (65%) and mood swings (55%) significantly improved with regular exercise,

enhancing the quality of life. However, arthritis and sleeping disturbances did not show significant changes.

Figure I

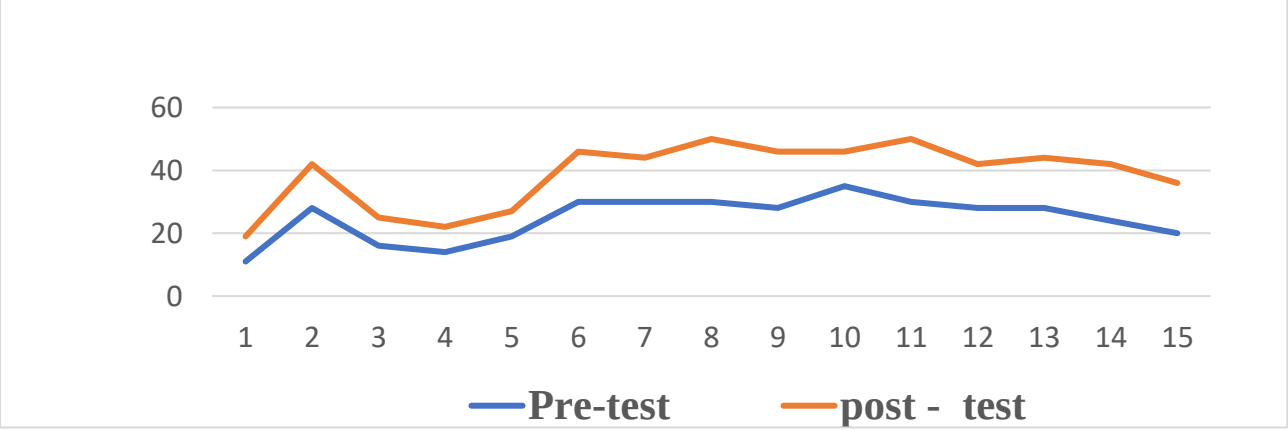
Utian Quality of Life Graph



Note – This figure presents a comparison of quality-of-life scores in a pre- and post-test assessment for 15patients.

Figure 2

Menopause Rating Scale



Note – This figure presents a comparison of Menopause Rating Scale scores in a pre- and post-test assessment for 15 patients.

Cost-benefits analysis

The project's total cost is $1,200, with a cost-benefit ratio (CBA) of 25, meaning that for every dollar invested, there is a cost saving of $25. The return on investment (ROI) is an impressive 2,455%. This project's financial benefits for menopausal women can be seen through direct and indirect savings, including reduced physician and emergency department visits, lower medication costs, and more cost-effective management of side effects. Additionally, by minimizing unnecessary laboratory testing for menopause symptoms, further cost savings can be achieved. According to Pinkerton's 2015 report, effectively managing menopausal symptoms can also reduce work productivity loss among menopausal women. Overall, the cost savings and high ROI highlight the potential economic value of effectively managing menopause symptoms.

Clinical Recommendations

The quality-of-life scores and menopause symptoms of patients in this project improved. Nurse practitioners (NPs) who treat perimenopausal and postmenopausal women in primary care settings should receive education on the advantages of making evidence-based diet and exercise recommendations. Along the care management continuum, nurse practitioners play a critical role in recognizing menopause at an early stage. Successful management of menopause syndrome can lower the chance of developing chronic illnesses. In addition, this project creates a menopausal treatment algorithm and teaching protocols for women in the peri- and postmenopausal stages.

Discussion

Whiteley et al. (2013) found that women experiencing menopausal symptoms had significantly lower quality of life and higher work impairment and healthcare utilization than women without menopausal symptoms. Depression, anxiety, and joint stiffness were found to be symptoms strongly associated with health outcomes. Perimenopausal women may benefit from hormone therapy (HT) in enhancing mood, but it may not significantly reduce vasomotor symptoms (VMS) (Santoro et al., 2020).

As a pharmaceutical option for managing menopause symptoms, there has been a significant increase in the utilization of non-FDA-approved bioidentical hormone replacement therapy (BHRT), as consistently reported by consumer surveys. However, informed providers must conduct additional research on the efficacy, safety, and consistency of non-FDA-approved hormone therapy to better understand of its potential benefits and risks for patients and accurately track its usage (Pinkerton, 2016).

Managing menopause can be challenging for primary care providers who may lack sufficient training or resources. Adequate education and training in menopause management are crucial for effective support during this transition. Non-pharmacological approaches like a healthy diet, regular exercise, and stress reduction techniques can effectively manage menopausal symptoms and pharmacological treatments. Therefore, primary care providers should offer resources and support for lifestyle interventions to promote better health and well-being in women going through menopause. Comprehensive care for menopause positively impacts women's quality of life, and proper training and equipped primary care providers are essential for offering effective management strategies.

Conclusion

The quality of life for menopausal women can be enhanced through regular exercise and dietary management, which can decrease some symptoms like hot flashes and mood swings, as shown by the evidence-based project on lifestyle changes. However, future evidence-based initiatives should focus on patients with a broader range of menopause durations and explore alternative treatments such as Bioidentical Hormone Replacement Therapy (BHRT). Nurse Practitioners can play a crucial role in identifying menopausal symptoms early on, reducing the risk of future chronic illnesses. The extensive research highlights the benefits of managing menopausal symptoms through lifestyle changes, such as exercise and diet, which can be combined with BHRT to improve women's quality of life and lower their risk of comorbid diseases. Encouraging healthy lifestyle changes can also promote long-term health and well-being during menopause. Women should seek guidance from their healthcare provider to determine the most effective treatment approach based on their needs.

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Appendices

Menopause Rating Scale (MRS)

Which of the following symptoms apply to you at this time?

(X ONE Box For EACH Symptom) For Symptoms That Do Not Apply, Please Mark “None”).

	Symptoms:	**none**	**mild**	**moderate**	**severe**	**extremely severe**
	Score =	**0**	**1**	**2**	**3**	**4**
1.	Hot flashes, sweating (episodes of sweating)					
2.	Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness)					
3.	Sleep problems (difficulty in falling asleep, difficulty in sleeping through the night, waking up early)					
4.	Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings)					
5.	Irritability (feeling nervous, inner tension, feeling aggressive)					
6.	Anxiety (inner restlessness, feeling panicky)					
7.	Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness)					
8.	Sexual problems (change in sexual desire, in sexual activity and satisfaction)					
9.	Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)					
10.	Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse)					
11.	Joint and muscular discomfort (pain in the joints, rheumatoid complaints)					

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Utian Quality of Life Scale (UQOL)

Please rate the degree to which you agree with the following statements, as they apply to you *within the past month*. Be sure to *answer every question!* Please circle your answer using the following 5-point scale:

1 Not true of me	2	3 Moderately true of me	4	5 Very true of me

1. I am able to control things in my life that are important to me.	1	2	3	4	5
2. I feel challenged by my work.	1	2	3	4	5
3. I believe my work benefits society.	1	2	3	4	5
4. I am not content with my sexual life.	1	2	3	4	5
5. I am content with my romantic life.	1	2	3	4	5
6. I have gotten a lot of personal recognition in my community or at my job.	1	2	3	4	5
7. I am unhappy with my appearance.	1	2	3	4	5
8. My diet is not nutritionally sound.	1	2	3	4	5
9. I feel in control of my eating behavior.	1	2	3	4	5
10. Routinely, I engage in active exercise three or more times each week.	1	2	3	4	5
11. My mood is generally depressed.	1	2	3	4	5
12. I frequently experience anxiety.	1	2	3	4	5
13. Most things that happen to me are out of my control.	1	2	3	4	5
14. I am content with the frequency of my sexual interactions with a partner.	1	2	3	4	5
15. I currently experience physical discomfort or pain during sexual activity.	1	2	3	4	5
16. I believe I have no control over my physical health.	1	2	3	4	5
17. I am proud of my occupational accomplishments.	1	2	3	4	5
18. I consider my life stimulating.	1	2	3	4	5
19. I continue to set new personal goals for myself.	1	2	3	4	5
20. I expect that good things will happen in my life.	1	2	3	4	5
21. I feel physically well.	1	2	3	4	5
22. I feel physically fit.	1	2	3	4	5
23. I continue to set new professional goals for myself.	1	2	3	4	5

Utian Quality of Life Scale (UQOL) Scoring Summary

Instructions: Each of the four subscales of the UQOL is represented by a unique color, as shown below. Sum the circled responses by color and enter the sum in the scoring summary section at the bottom of the page.

1.	I am able to control things in my life that are important to me.	1	2	3	4	5
2.	I feel challenged by my work.	1	2	3	4	5
3.	I believe my work benefits society.	1	2	3	4	5
4.	I am not content with my sexual life.	5	4	3	2	1
5.	I am content with my romantic life.	1	2	3	4	5
6.	I have gotten a lot of personal recognition in my community or at my job.	1	2	3	4	5
7.	I am unhappy with my appearance.	5	4	3	2	1
8.	My diet is not nutritionally sound.	5	4	3	2	1
9.	I feel in control of my eating behavior.	1	2	3	4	5
10.	Routinely, I engage in active exercise three or more times each week.	1	2	3	4	5
11.	My mood is generally depressed.	5	4	3	2	1
12.	I frequently experience anxiety.	5	4	3	2	1
13.	Most things that happen to me are out of my control.	5	4	3	2	1
14.	I am content with the frequency of my sexual interactions with a partner.	1	2	3	4	5
15.	I currently experience physical discomfort or pain during sexual activity.	5	4	3	2	1
16.	I believe I have no control over my physical health.	5	4	3	2	1
17.	I am proud of my occupational accomplishments.	1	2	3	4	5
18.	I consider my life stimulating.	1	2	3	4	5
19.	I continue to set new personal goals for myself.	1	2	3	4	5
20.	I expect that good things will happen in my life.	1	2	3	4	5
21.	I feel physically well.	1	2	3	4	5
22.	I feel physically fit.	1	2	3	4	5
23.	I continue to set new professional goals for myself.	1	2	3	4	5

Scoring Summary

	Lower QoL -2SD	-1SD	Mean	+1SD	Higher QoL +2SD
Occupational QoL	13	19	25	31	35
Health QoL	11	16	21	26	31
Emotional QoL	12	16	20	24	28
Sexual QoL	0	4	8	12	15
Total QoL	48	61	74	87	100

Instructions: Means for each factor, along with standard deviations above and below the mean, are shown above. After summing each factor, mark with an "X" roughly where the patient's score falls along each continuum. These marks will provide a graphic summary of the patient's QOL score on each factor and for the scale as a whole.