

INTRODUCTION

Chronic pain is defined as “pain that persists or recurs for longer than 3 months”, with “biological, psychological and social factors” which contribute to the genesis, persistence and duration of chronic pain (1). Fibromyalgia is a chronic primary pain syndrome, meaning that the pain is not attributable to an underlying medical condition (2). This essay will explore the relevance of lifestyle medicine in managing fibromyalgia through the framework of lifestyle medicine’s six pillars. In doing so, I aim to offer insights into strategies for improving pain management and overall quality of life within this patient group. Before discussing how these pillars can be utilised in the management of fibromyalgia, I will provide an overview of both lifestyle medicine and fibromyalgia separately. This will establish a foundation for understanding how these pillars can be integrated into the care of patients with fibromyalgia.

LIFESTYLE MEDICINE

Lifestyle medicine involves “the application of environmental, behavioural, medical and motivational principles to the management of lifestyle-related health problems in a clinical setting,,including self-care and self-management” (3; p3). It employs a multi-disciplinary approach requiring collaboration among clinicians, public health professionals, scientists, researchers and educators to create change (4). The British Society of Lifestyle Medicine (BSLM) have proposed six pillars of lifestyle medicine: physical activity, mental wellbeing, sleep health, healthy eating, social connectedness and minimising harmful substances (5).

Although lifestyle management is traditionally linked to managing chronic diseases with modifiable risk factors - such as type 2 diabetes and cardiovascular conditions - its utility extends beyond such conditions and holds promise for managing chronic pain. While fibromyalgia’s aetiology is not primarily attributable to lifestyle factors, lifestyle medicine offers practices for reducing the burden of disease in individuals with the condition.

By educating individuals on how lifestyle factors may influence their disease course, there is the potential for patient empowerment and active involvement in their health. Active engagement has been shown to facilitate a more attainable and sustainable approach to disease management by fostering a sense of agency, but also has broader advantages for the healthcare system (6,7). It may reduce the frequency of acute interventions, appointments with healthcare professionals, and overall healthcare costs. This not only optimises the utilisation of healthcare resources but also helps patients avoid potential adverse effects from medications or the frequent need for medical appointments (3: p439).

FIBROMYALGIA

Fibromyalgia, as mentioned, is a chronic primary pain syndrome. It is "characterised by widespread pain in the body present for at least 3 months" (8). Although the exact pathophysiology is not clear, research suggests a multisystem and multifactorial influence including the central and peripheral nervous system, autonomic nervous system, sleep disturbances, immune alteration and genetic changes (9).

Alongside chronic widespread pain, it is common for individuals to experience other somatic symptoms such as fatigue, sleep disturbances and muscular stiffness (8). The psychological symptoms of fibromyalgia include anxiety, depression and cognitive dysfunction of memory and concentration problems and some self-reported triggers for symptom flare ups include "emotional distress, weather changes, insomnia, and strenuous activity" (10).

Approximately 5.4% of the UK population have fibromyalgia, yet there are physicians across the world that are still unsure on how to approach and manage the condition (11,12).

Some risk factors to the development of fibromyalgia include adverse childhood experiences, females, older/middle age, smoking, high BMI, alcohol abstinence, pain disorders and other medical disorders in adulthood (13). Notably, some of these risk factors are modifiable, suggesting a role for lifestyle interventions in managing the condition.

The condition is diagnosed by the presence of chronic multifocal pain, alongside a physical examination. The character, focus and intensity of fibromyalgia pain can be worsened by comorbidities like obesity, and physical or mental stress (14). If one or more of the somatic, psychological or cognitive symptoms previously mentioned are present then the diagnosis should be strongly suspected. According to the 1990 American College of Rheumatology Classification Criteria (15), fibromyalgia is characterised by tenderness upon palpation at multiple symmetrical points on the body in the absence of any underlying systemic disease that may be attributing to this pain (8). However, as the co-existence of fibromyalgia and other medical diseases is not uncommon, this examination may be not a reliable diagnostic indicator in many cases (12).

Since there is no clear diagnostic test for fibromyalgia, the diagnosis remains a clinical one. The variability in the presentation of fibromyalgia poses diagnostic challenges, especially with the uncertainty and lack of knowledge surrounding the condition. This can then complicate the initiation of management when the diagnosis is unclear (12).

When diagnosis is uncertain or initial management ineffective, guidelines recommend a referral specialists dependent on the patient's most debilitating

symptoms, resulting in long waiting periods for specialist appointments. This necessitates a way of controlling symptoms in the interim while patients transition between healthcare providers.

Even when diagnosed, pharmacological management may be ineffective or worse, unsafe when considering adverse effects and dependence on medication (16). In a treatment satisfaction survey, fibromyalgia patients consistently reported lower satisfaction with pharmacological treatments than with any other type of non-pharmacologic treatment, reinforcing the importance of enhancing the prescription of those nonpharmacologic approaches (16).

The management of fibromyalgia pain in the UK incorporates a mixed-method approach of pharmacological and non-pharmacological interventions. While pharmacological management—primarily using antidepressants for pain and mood—is common, its benefits are limited and often short-term, helping only a subset of patients (8). Non-pharmacological management such as supervised group exercise programmes, cognitive behaviour therapy (CBT) or acupuncture are first-line and are generally better accepted by patients in the UK due to fewer side effects (17, 18).

The prognosis of fibromyalgia is hard to predict but the course of the chronic condition varies over time. Most symptoms are alleviated with good compliance with non-pharmacological therapies in particular, and active participation of patients in their own care is essential (19). Pharmacological treatments are often less reliable but both approaches involve “trial and error” for patients (8).

So, despite the multi-modal management options, fibromyalgia treatment remains challenging. There is no single intervention that can tackle all the given symptoms in a given patient (18). As a result, the aim when navigating fibromyalgia is to improve quality of life and health alongside the symptoms instead of eliminating them. Due to its multifactorial nature, fibromyalgia requires a holistic approach “based on core principles of education, goal setting...and outcomes assessment” (19). This is where the principles of lifestyle medicine come into play.

THE SIX PILLARS OF LIFESTYLE MEDICINE:

PHYSICAL ACTIVITY

Physical activity is a significant cause of chronic disease and is one of the most common causes for mortality in noncommunicable disease (20). Individuals who are inadequately active face a 20-30% higher risk of mortality compared to those engaging in sufficient regular physical activity (20). The BSLM encourages clinicians to support patients to incorporate movement more into their everyday routines.

In fibromyalgia, increased sedentary behaviour and low physical activity levels are often associated with greater disease severity when compared to those who are physically active in both light and vigorous physical activity (21).

The National Institute for Health and Care Excellence (NICE) guidelines recommend supervised group physical activity as a first-line management strategy for fibromyalgia (22). The initial supervision helps to educate patients and encourages them to continue taught activities outside of the programme. Such exercises relate to cardiovascular/aerobic conditioning, resistance/strength training, flexibility and proprioceptive exercises.

There is a wide body of evidence to support the efficacy of aerobic exercise in fibromyalgia management as it seems to improve pain, fatigue, low mood and health related quality of life as well as overall fitness (23). However, consistent exercise is necessary to maintain these positive effects and should be carried out at least twice weekly, with noticeable effects emerging after at least a month.

One systematic review showed significant improvement in health-related quality of life, pain, fatigue, stiffness, and physical function in patients with fibromyalgia when they had incorporated mixed physical activity in their routine for a median of 12 weeks (24). These exercises involved “a combination of aerobic exercises...at a wide range of intensities...resistance exercises. and flexibility exercises”. These exercises included dancing, walking, swimming, stretching, muscle strengthening for a duration of 45-60 minutes on 1-7 days a week.

Even when certain activities are not feasible due to physical or economic constraints, research suggests that short but frequent stretching sessions may improve pain and mental and physical functioning in fibromyalgia patients (25).

There is no high-quality evidence to indicate the benefit of one exercise over another. However, it highlights the importance of incorporating any form of physical activity, including hobbies, as a way to promote movement and alleviate symptoms. It is essential to communicate to patients that any movement can have benefits for symptom alleviation and that choosing enjoyable forms of activity will enable long-term sustainability.

MENTAL WELLBEING

Lifestyle medicine offers treatment and prevention options to improve mental health, highlighting how its other pillars—including diet, physical activity, substance reduction, sleep, and healthy relationships—can positively impact mental wellbeing (4).

Understandably, low mood and anxiety often accompany fibromyalgia and these can be managed effectively in many patients through specific antidepressant medications (8, 10). However, when medications are insufficient, or where there is a suboptimal outcome, lifestyle approaches could play a part in improving mental wellbeing in fibromyalgia.

The impact of physical exercise on mental health has been extensively studied. The key message is to find enjoyable activities which will increase compliance and sustainability long-term. When this is done, depressive mood and mental confusion associated with fibromyalgia may be reduced (26).

Another component of lifestyle which can improve mental health is spending more time outdoors. Numerous studies have investigated the benefits of green spaces (e.g. gardens or forests) and blue spaces (bodies of water e.g. rivers or lakes) for improving mood and reducing anxiety (27). Outdoor activities such as gardening, exploring natural areas, exercising, and nature-based arts and crafts are often accessibly at a low or no cost basis and can all contribute hugely to mental wellbeing.

Finally, CBT is a psychological treatment for chronic primary pain including fibromyalgia (22). It is not only effective at reducing the key mood-related symptoms but also has the added benefit of reducing the perception of physical pain. CBT has a long-term effect due to learned techniques for coping, reframing of negative thoughts and encouraging acceptance of the disease (28). CBT equips patients with useful skills for managing the condition and other life stressors by fostering healthier behaviours and thought patterns.

SLEEP HEALTH

The BSLM stresses the importance of good quality sleep for overall physical and mental health, disease prevention and quality of life (4). However, individuals with fibromyalgia often experience short sleep duration, a long wake time after sleep onset, light sleep and difficulty falling asleep (29). Poor sleep quality correlates with increased symptoms such as generalised pain, memory difficulty, and irritable and anxious moods in fibromyalgia (30).

This relationship can create a negative cycle whereby poor sleep worsens pain, and increased pain further disrupts sleep. Addressing this cycle through physical exercise, as discussed earlier, can reduce pain and subsequently improve sleep quality.

A systematic review found that aerobic exercise has some effect in increasing sleep quality in people with fibromyalgia with meditative exercises like tai chi or qigong being particularly beneficial (31). Mindfulness practices such as breath awareness and body scan meditation improved a variety of sleep related parameters such as sleep quality and subjective insomnia after seven weeks of practice (32)

Good sleep hygiene practices are also emphasised in all individuals who experience sleep difficulties. These include aims to follow a regular sleep and wake time, avoiding caffeine in the afternoon, limiting alcohol intake, staying active and spending time in natural light to support the natural circadian rhythm (4).

HEALTHY EATING

The BSLM do not advocate for any single dietary approach but rather focuses on consuming a predominantly plant-based diet with a variety of fruit, vegetables, nuts, seeds, and legumes and an emphasis on avoiding ultra-processed foods. The BSLM do however also emphasise the importance of personalised dietary choices based on individual circumstances (4).

Research by Haugen et al. found that 42% of the patients in their study reported worsening of disease symptoms after consuming certain foods. The most common aggravators included: meat, alcohol, coffee, sweets, sugar (33).

Another study on the effect of a 3-month low-salt, uncooked vegan diet rich in lactobacilli on fibromyalgia symptoms showed a reduction in pain, joint stiffness and sleep quality (34). This dietary change also resulted in an reduction in BMI and serum cholesterol levels. Similarly, a predominantly raw, pure vegetarian diet can alleviate fibromyalgia symptoms and improve quality of life (35).

However, it is noted that these restrictive diets often lack essential daily nutrients and are not always practical, but they indicate a potential benefit in consuming plant-based, uncooked, unprocessed foods regularly. It also indicates the possible role of the gut microbiome in the development and persistence of fibromyalgia.

Research on dietary interventions for fibromyalgia are often limited and of low quality. This highlights the need for well-designed clinical trials to investigate the role of nutrition, diet and gut microbiome in fibromyalgia. Nevertheless, the existing evidence indicates that avoiding specific triggers and including beneficial foods can alleviate symptoms, which aligns with the BSLM's approach of personalised dietary recommendations. Following BSLM-endorsed dietary patterns may also help manage cardiovascular risk factors, such as weight and cholesterol, providing overall health benefits even if fibromyalgia symptoms are not resolved.

SOCIAL CONNECTEDNESS

Social isolation and loneliness have a negative impact on both physical and mental health and are associated with an increased all-cause mortality (36)

Loneliness is associated with an increased prevalence of chronic pain and lonely episodes increase bodily pain perception by causing increases in negative thought patterns about pain (37, 38). People with chronic pain also often avoid social activities due to discomfort, which can exacerbate both pain and social isolation (39).

In the United States, a study found that greater social support was associated with higher self-compassion and better mental health-related quality of life in individuals

with fibromyalgia (40). Another study showed that a peer social support network for people with fibromyalgia exerted positive effects on physical, mental and social wellbeing among fibromyalgia patients and empowered them to better manage their condition (41).

There are very few studies focusing on how healthy social relationships influence fibromyalgia so there is scope for further research regarding this. It would however be beneficial to encourage healthy social relationships for other features of fibromyalgia like for the mental health symptoms that often coexist. There is extensive evidence to support the use of social connection to alleviate mental health burden in patients without fibromyalgia, so it is possible that this could be applied in fibromyalgia patients too (36). This may explain why group exercise programs are commonly recommended—not only for their cost-effectiveness and ability to accommodate large numbers of patients but also because they foster social connections. This very much aligns with BSLM's emphasis on being ready to 'prescribe connection' for those feeling lonely and isolated

SUBSTANCE USE

BSLM recognises the association of smoking and heavy drinking as being key behavioural risk factors associated with many chronic health conditions, both mental and physical (4). They advocate for the reduction of these behaviours through a non-judgemental and supportive approach.

Smoking is a risk factor for fibromyalgia (13) and when compared to non-smokers, Yunus et al. found that clinical pain severity and functional impairments in smokers worsened with higher cigarette use (42). Additionally, another study suggested that smoking habits may exacerbate not only psychiatric symptoms but also physical pain and daily functioning in individuals with fibromyalgia (43).

Interestingly, when discussing alcohol consumption, patients who consumed low-to moderate amounts of alcohol reported lower fibromyalgia symptoms and better quality of life compared those who did not consume alcohol (44, 45). While moderate alcohol consumption could be connected to a decreased severity of symptoms, it also carries the risk of developing a reliance on alcohol for symptom control. Healthcare providers should be aware of this potential risk and monitor patients to prevent unhealthy and harmful behaviours.

Medication misuse and overreliance are also concerns, particularly with prescribed medications that do not adhere to fibromyalgia management guidelines. For example, prescriptions for opioids to relieve pain come with risk of overuse, and dependence especially when not reviewed or have no end goal of cessation (46)

So, as healthcare professionals, it is important to inquire about these factors and prevent avenues into reliance on substances that have the potential to cause harm to overall health even if they do seem to alleviate fibromyalgia-specific symptoms.

CONCLUSION

In conclusion, lifestyle medicine emphasises a personalised approach to all patients and their individual circumstances and needs. The six pillars of lifestyle medicine are all interconnected and have the potential positively influence each other. It is important for medical professionals to convey the research surrounding lifestyle measure and behaviour changes for fibromyalgia to patients in a safe, evidence-based and guideline supported manner.

However, before such guidelines can be implemented, there needs to be a robust evidence base that proves the safety and efficacy of such interventions. Currently, there is a lack of high-quality research relating to some of the pillars of lifestyle medicine, especially surrounding nutrition and social connection. These areas offer potential for enhancing fibromyalgia management and warrant further, high-quality research.

Additionally, it is crucial to note that patients may face barriers such as economic constraints, access to services, or difficulty adhering to lifestyle changes. Addressing these barriers will require a multi-disciplinary approach, including support from healthcare professionals, patient education, and a focus on making lifestyle modifications realistic and attainable.

Overall, lifestyle medicine centres on behaviours that patients can actively manage with professional guidance, it empowers them to take control of their health through non-pharmacological means. Alternatively, lifestyle approaches can complement existing medication, potentially augmenting outcomes further. Implementing a lifestyle medicine approach carries minimal risk of harm when done in a guided manner and offers an abundance of benefits for overall health while helping to prevent future comorbidities in a sustainable and achievable way.

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