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BMHP5003 Introduction to Physiology
Assessment 2

Student Name- Zainab Jalloh

Student ID-2008337

Course: BMHP5003

Teachers Name: Laila Surani

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Introduction

The human body functions as a whole, although composed of several interconnected systems. Each component serves an important, often interlinked, role in maintaining health and well-being (Frontera and Ochala, 2015). The field of study known as anatomy focuses on the human body, namely on its internal structure and the physical connections between its many components. Physiology studies the body's systems and how they interact to keep humans alive and healthy. Ten million individuals in the United Kingdom live with arthritis, making it one of the most prevalent health problems among the elderly (Chu et al., 2017). Inflammation and soreness in the joints are a result, potentially limiting the affected person's mobility. This study will explain regular health and lifestyle measurements for eliciting data on the body's functioning from people with this health condition. We will present examples from the United Kingdom's health and social care practice, policy, and planning to illustrate further how data and metrics gleaned from the study of bodily functions may contribute to care planning for people and communities. Finally, I'll give some advice that might help UK folks dealing with the selected health problem.

Anatomy And Physiology Of The Arthritis

Arthritis is a widespread condition that causes pain and stiffness in the joints. Discomfort and swelling might result, making it hard to be active. The joints may become inflamed or degenerate (break down) due to arthritis (Yaribeygi et al., 2017). Because of these alterations, using the affected joint may become painful. Those parts of the body most prone to arthritis include the feet, hands, hips, knees, and lower back.

Soft tissues provide structure and cushioning for the joints, preventing bone-on-bone contact. Articular cartilage, a kind of connective tissue, is crucial. It aids in pain-free joint movement by reducing friction (Nieman and Wentz, 2019). Synovial membranes provide a cushioned pocket of fluid that helps lubricate certain joints. Tendons and ligaments give structural support to various joints, including the knees. Muscles attach to bones through tendons, whereas bones link to one another via ligaments.

Different Types of Arthritis

There are more than a hundred distinct forms of arthritis (Atukorala et al., 2016). There are many different kinds of arthritis, but the most frequent ones include the following:

Osteoarthritis: "Wear and tear" arthritis, often known as osteoarthritis, is caused by the gradual degeneration of joint cartilage over time. It accounts for the vast majority of arthritis cases.

Ankylosing spondylitis: Chronic back pain is caused by ankylosing spondylitis (usually on the lower back).

Juvenile arthritis: JA is an autoimmune disease that damages the tissue in and around the joints of young people. Children under the age of 16 are the typical patients of juvenile arthritis (Lee et al., 2015).

Gout: Gout is painful when uric acid crystals accumulate in the joints.

Psoriatic arthritis: Individuals with psoriasis are more likely to develop psoriatic arthritis, an inflammatory condition of the joints (an autoimmune disorder that causes skin irritation) (Husni, Merola, and Davin, 2017).

Rheumatoid arthritis: Synovial membranes in the joints are attacked by the immune system in rheumatoid arthritis.

A variety of factors may cause arthritis. Increased uric acid levels, for instance, may lead to gout symptoms. However, the root cause of certain forms of arthritis is still a mystery. Arthritis may occur if an individual has a predisposition for the condition, engages in a line of work or a sport that causes excessive joint stress, or contracts an illness that attacks the immune system or a virus that causes joint inflammation (Haroon et al., 2015).

Health And Lifestyle Routine Measures For Arthritis

It has been shown via scientific investigation that certain people's susceptibility to developing arthritis is increased by their genetic makeup (Bastick et al., 2015). However, lifestyle adjustments may halt or decrease the development of this illness. Here are several descriptions:

Diet: Swedish research found that omega-3 fatty acid-rich diets reduced the risk of rheumatoid arthritis in women (Culvenor et al., 2017). Omega-3s may be found in many different kinds of foods, such as:

- Various types of fish, mainly from cold water, include salmon, tuna, and sardines.
- Items from the nut and seed families, such as walnuts, chia seeds, and flaxseed.
- Oils extracted from plants, including flaxseed, soybean, and canola.
- Yogurt, eggs, and milk are just some of the fortified foods.
- Supplements.

Foods like these may also be helpful in the battle against arthritis:

- Tart cherries, which have anti-inflammatory effects.
- Low-fat dairy helps build bone mass and strength.
- Eating broccoli strengthens bones and postpones the onset of osteoarthritis.
- Antioxidants found in green tea save cartilage from damage.
- Vitamin C, abundant in citrus fruits, has anti-inflammatory effects that help prevent inflammatory arthritis.
- The anti-cartilage effects of garlic.

Exercise: Arthritis may be avoided in part by regular physical exercise. Regular moderate activity, such as walking or swimming for 30 minutes five times a week, is recommended by the Arthritis Foundation for maintaining joint flexibility and strengthening muscles that stabilise the joints (Gong and Mao, 2016). Walking, completing household tasks, and playing with kids and animals are all great forms of exercise. On the other hand, the best results will come from a regular exercise routine.

Weight management: An additional four pounds of pressure on the knees and a tenfold rise in hip strain result in even a little weight gain, which may be easy to detect. Cartilage normally cushions the joints and breaks down under that kind of stress (Matcham et al., 2015). Inflammatory substances called cytokines are produced by fat cells as well. Cytokines cause the accelerated degradation of joint cartilage. An increase in body mass causes an increase in cytokine production, which hastens the degeneration of the cartilage that cannot be replaced.

Glucose levels: In the United States, arthritis affects more than half of those with diabetes (Zangi et al., 2015). This is because cartilage becomes more rigid in response to elevated blood sugar levels, making the tissue more vulnerable to wear and tear due to regular joint activity. Deterioration of cartilage is another potential complication of diabetes, which promotes inflammation throughout the body.

Quit smoking: Rheumatoid arthritis risk is higher among smokers. Problems with breathing and circulation brought on by smoking may also make it difficult to maintain an active lifestyle (Lee et al., 2016). This may make it difficult to move about, leading to decreased flexibility and weaker muscles supporting the joints.

Health And Social Care Practices For Arthritis

The Arthritis Program at the CDC has collaborated with government health agencies during the last decade to create and expand a comprehensive health programme for arthritis.

Determining the Nature of Arthritis's Prevalence: Since 2002, a validated self-report case-finding item for arthritis surveillance has been utilised in both national (National Health Interview Survey) and state-based annual health surveys. The prevalence and severity of arthritis are tracked using self-reported data, focusing on valuable information for informing programmatic efforts at the state and municipal levels (Zhou et al., 2016). Arthritis and other rheumatic conditions have been defined by the National Arthritis Data Workgroup based on the International Classification of Diseases, Ninth Revision, and Clinical Modification to evaluate the effects of arthritis on the health care system by utilising administrative data.

Increasing the Availability of Proven Treatments: Through (1) proactively identifying current therapies suited for arthritis, (2) financing the development of new interventions, and (3) assessing the efficacy of new and existing interventions, the CDC has been increasing the number of evidence-based programmes to address arthritis (Chu et al., 2017). The (CDC) collaborated with public health organisations to develop uniform criteria to evaluate the efficacy of self-management education and physical activity programmes to treat arthritis. Moreover, programmes in other languages have been added to the menu due to preventative research into the design and assessment of novel intervention delivery methods.

Educating the General Public on Effective Management Methods: The (CDC) conducted in-depth audience research to inform the creation of two health communications campaigns, Physical Activity, the Arthritis Pain Reliever, and Buenos Das, Arthritis, respectively (Atukorala et al., 2016). Results from both initiatives have shown an increase in residents' reports of their physical activity in the areas where they were implemented. At present, at least one of these campaigns is held annually by all CDC-funded state arthritis programmes in highly concentrated local regions. Campaign materials are freely accessible for other groups to utilise.

Assembling the Stakeholders: Community-based arthritis care programmes are increasingly based on scientific evidence. State grantees and other partners meet annually to plan for the next year, assess previous accomplishments, discuss how to improve, and exchange helpful information and ideas (Husni, Merola, and Davin, 2017). The (CDC) has also convened expert groups to investigate connections between exercise and rheumatoid arthritis and to define case types for monitoring juvenile rheumatic diseases. Osteoarthritis is the most prevalent form of arthritis; therefore, in 2009, the Arthritis Foundation and the CDC convened a committee of more than 70 experts and stakeholders from various fields to develop a plan for public health action to combat the condition (Lee et al., 2015).

Recommendations

Be active: Arthritis pain may be reduced without the need for medication if you engage in regular physical exercise. Adults with arthritis may benefit greatly from regular exercise in terms of decreased pain, enhanced function, improved mood, and enhanced quality of life (Frontera and Ochala, 2015). Sleep quality, bone health, cognitive health, and weight management are all bolstered by regular physical exercise. Regular exercise benefits your physical health, lowers your chance of getting other chronic illnesses like heart disease and diabetes, and helps manage these disorders if you already have them (Haroon et al., 2015).

Manage weight: People with arthritis might benefit significantly from a weight loss and maintenance programme. Weight loss relieves pressure on the body's joints, especially those that carry more weight, including the hips and knees. People with Arthritis might get relief from pain and gain mobility by decreasing as little as 10 to 12 pounds (Bastick et al., 2015). You may lose weight at any age by engaging in low-impact physical exercise (like walking) and making smart food choices.

Protect the joints: Arthritis may be triggered or made worse by joint trauma. Pick low-impact exercises like walking, cycling, and swimming. These gentle pursuits don't twist or put undue pressure on the joints; thus, they pose little danger of damage (Culvenor et al., 2017). Explore options for secure exercise while dealing with arthritis. Joint trauma from activities like sports or the workplace or incidents involving motor vehicles might raise the likelihood of developing osteoarthritis later in life. Reduce your chances of acquiring or aggravating osteoarthritis by taking precautions against or limiting the effects of joint injury. The actions range from using safety gear and seatbelts to avoiding activities that might cause repetitive motion injuries (Lee et al., 2016).

Talk to a Doctor: Joint pain and other arthritic symptoms should prompt a visit to the doctor. It's crucial to acquire a proper diagnosis as soon as possible, so therapy can begin. Particularly for lupus, rheumatoid arthritis, and gout, early and efficient treatment is crucial to minimising symptoms and preventing the condition from worsening (Gong and Mao, 2016).

Arthritis therapy focuses on

- Alleviate suffering.
- Protect your joints as much as possible.
- Increase or keep up performance and quality of life.

If you commit to keeping your doctor's visits and using the medication as prescribed, you may play a vital part in managing your arthritis. This is paramount if you suffer from many chronic illnesses like diabetes and cardiovascular disease (Zhou et al., 2016).

Conclusion

Pain or sickness in the joints is often referred to as arthritis. Arthritis comes in a variety of forms, but there are things you can do to lessen your risk of developing one of them. However, there is a hereditary component to the disease's prevalence. Risk factors for developing arthritis include a sedentary lifestyle, an unhealthy diet, and a smoking history. Individuals might strive to stick to an anti-inflammatory, low-fat diet high in omega-3 fatty acids. They should exercise regularly to keep their joints mobile and their weight in check. One of the most effective ways to lower your risk of getting arthritis is never to smoke or make a concerted effort to stop. Joint discomfort is a medical emergency that requires professional help. Getting started on a treatment plan sooner rather than later may help avoid or delay joint injury.

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