

**Introduction to Physiology
(BMHP5003)**

Assessment Component 2

Case study - Written Report

Student name: Richard Kanjoma

Student number: 1916228

Group:2

Lecturer name: Noura Mohamed

Submission Date: 25/08/21

Word count: 2174

Learner declaration

This assignment is my own original work. No part of this work has been copied from any other source or person except where due acknowledgement is made, and no part of the work has been previously submitted for assessment at this or any other institution.
I have read the Student Academic Integrity Policy and understand its implications.

Student signature: rkanjoma

Date:25/08/21

Contents

Introduction	2
Objectives of the assessment	2
Case study: Patient A	2
Cardiovascular diseases	2
Prevalence of Cardiovascular diseases in England	3
Health assessment	4
Normal physiological conditions	4
Abnormal physiological conditions	4
Recommendations	5
Conclusion	6
References	7
Appendix	9

Introduction

This is an individual report that seeks to develop and explain key findings from a health assessment of a respondent who could be suffering from obesity, diabetes, or cardiovascular diseases since these are the commonest conditions that affect the physiology of an individual based on lifestyle. This health assessment is carried out following a questionnaire that was designed on the basis of lifestyle including; smoking, alcohol consumption, diet, and exercise. The aim of this assessment is to find out whether the physiology of the respondent is normal or there exist some abnormalities like obesity, diabetes, and cardiovascular diseases. Therefore, the assessment has the following objectives;

Objectives of the assessment

1. To find out the specific normal and abnormal physiological conditions of the individual
2. To find out how best the identified abnormal physiological conditions can be addressed to bring the greatest benefit.

3. To suggest ways of bridging the gap between the normal physiological conditions and abnormal conditions based on lifestyle changes.

Case study: Patient A

From the questionnaire, Patient A is an active smoker who smokes about 9 cigarettes a day in combination with drinking alcohol. Patient A also has high blood pressure and high cholesterol levels and does not exercise enough. The patient also has a bad diet because he eats frozen meals for about 4 times a week. However, the patient has a normal weight of 70kgs and a height of 170cm which resulted in a BMI of 24.2. This indicates that he is not obese. The patient has no history of heart attack or of siblings and parents below and above 60 years of age.

For the past 2 years, the lifestyle of people in England has changed because of the outbreak of Covid 19 that led to; change to sedentary lifestyle; change in working patterns; diet changes; and boredom that increases the rates of smoking and alcohol consumption. Therefore, Patient A's current lifestyle reflects that of the majority of people in England. Patient A's lifestyle may lead to major cardiovascular diseases.

Cardiovascular diseases

According to the National Health Service (2020), cardiovascular diseases is a general term used to describe the conditions and diseases that affect the heart and the blood vessels. One's lifestyle associated with alcohol consumption, inactivity, and smoking causes cardiovascular diseases because they lead to the accumulation of fatty deposits and other substances inside the arteries causing blood clots. Gupta and Wood (2019) identified four major types of cardiovascular diseases to include; coronary heart disease, strokes, peripheral arterial disease, and aortic disease.

Coronary Heart Disease: This is a condition where the heart's major blood vessels are damaged due to low flow or blocked blood flow to the heart. The blockage of the blood flow to the heart is caused by the accumulation of "plaque"/ materials made up of cholesterol deposits. (GBD, 2019)

Stroke: Stroke is a medical emergency that occurs when the blood flow to the brain is interrupted. Stroke is sometimes called cerebrovascular accidents. An individual with stroke will find difficulty in walking, speaking, and sometimes paralysis of arm or leg.

Aortic diseases: This is a disease where arteries harden hence functioning improperly. It is usually caused by high blood pressure or sudden injuries. (Mayo Clinic, 2020). People with a history of inherited connective tissue disorders are also at a high risk of getting.

Peripheral arterial disease: Under this condition, the blood vessels become narrow and hence limit blood flow to the limbs in the process. This disease is associated with age, diabetes, and smoking due to the accumulation of fatty deposits and calcium around the walls of the arteries.

According to Stroke Association (2018), the more risk factors one has, the more chances of getting cardiovascular diseases. These risk factors include; high blood pressure, smoking, high cholesterol, diabetes, sedentary lifestyle, obesity, alcohol consumption, poor diet, and family history of this disease.

According to Global Burden of Disease (2019), any adult can get Cardiovascular diseases even though people above 50 years are more likely to get it, and risks increase with an increase in age in both men and women. However, records indicate that men are more likely to get cardiovascular diseases at a younger age than the women.

Prevalence of Cardiovascular diseases in England

According to British Heart Foundation (2020), around 7.6 million people are living with heart and circulatory diseases with 4 million being men and 3.6 million being women. This indicates that the prevalence of Cardiovascular diseases is more in men than in women in the UK. In England alone, statistics indicate that around 6.4 million people are living with heart and circulatory diseases, and about 137,152 people dying from the disease. (British Heart Foundation, 2020).

According to NHS England records, Cardiovascular diseases mortality rate declined by 68% between 1980 and 2013 in the United Kingdom, with a constant rate of 3% in England. In general, Cardiovascular diseases causes a quarter of all deaths in the United Kingdom with about 160,000 deaths per year. (British Heart Foundation, 2020). According to NHS England (2020), Cardiovascular diseases was the commonest cause of heart attacks in England for both men and women by the end of year 2019.

Health assessment

According to the questionnaire, the patient's lifestyle indicates the following normal and abnormal physiological conditions.

Normal physiological conditions

Findings revealed that the patient has never got a heart attack or suffered from angina. According to Mayo Clinic (2020), this result indicates that a patient's cardiovascular system is still safe since bloods clots have never blocked flow to the heart and the tissues still receive oxygen.

According to the results of the questionnaire, the patient has never had a stroke, "shock" or any weakness down one side. This is normal because a shock or stroke is caused by interruption of blood supply to the brain. (Roth et al., 2020). This means that a patient can walk without trouble, can speak well and understand things.

Furthermore, the results show that a patient's close relatives like mother, father, brothers and sisters have never got a heart attack below the age of 60 to the best of his knowledge. This is good news because it indicates that the genes in his family are resistant to heart attack. However, it does not guarantee him that will never get a heart attack basing on these results because it is directly attributable to lifestyle not genes. (Gupta and Wood, 2019).

The patient's weight and height resulted in the Body Mass Index (BMI) of 24.2 which is considered normal. This shows that a patient is not obese and this is a good thing. This could be one of the reasons why he has never suffered from a stroke and heart attack because he is not obese.

Abnormal physiological conditions

Findings from the questionnaire indicated that the respondent does exercise once a month. This is not good because it shows that he lives a sedentary lifestyle. According to Stroke Association (2018) a sedentary lifestyle poses a risk of diabetes, high pressure, obesity, cardiovascular diseases, and some cancers among others.

Results also revealed that the patient smokes as a habit with a range of 1 to 9 cigarettes a day. This behavior is abnormal because smoking is completely not recommended for health reasons because it leads to the damage of the cardiovascular system and respiratory system. (Roth et al., 2020). According to Gupta and Wood (2019), smoking is the most cause of

cardiovascular diseases, and other diseases like diabetes. Therefore, the patient is exposed to risks of getting cardiovascular diseases and other respiratory diseases like lung cancer.

The results showed that a patient has a blood pressure of 140/90 mmHg that is also known as hypertension. According to Diabetes UK (2021), blood pressure of 140/90 and above is considered high for a period of time. This blood pressure is abnormal because a normal blood pressure is one below 120/80mmHg. (British Heart Foundation, 2020). Therefore, this high blood pressure poses a big risk of cardiovascular diseases, and diabetes to the patient in the case.

Furthermore, the findings revealed that a patient has high cholesterol which is not normal. This is not normal because it can limit blood flow, and this increases the risk of cardiovascular diseases or stroke. (British Heart Foundation, 2020). High cholesterol also increases on the risks of getting diabetes to the patient. (Diabetes UK, 2018). This can be attributed to his inactive lifestyle and his habit of smoking.

When it comes to diet, the results revealed that the patient has a bad diet because he eats from meals for about 4 times a week. According to Rippe (2018), eating frozen meals containing large amount of trans fat, leaves the patient prone to heart diseases, and is also associated with high cholesterol levels. This explains while the patient under study has high cholesterol levels.

The patient enjoys drinking alcohol because results showed that he drinks between 3 and 6 units of alcohol a day. Continuous consumption of alcohol is not good because it can lead to chronic diseases, and other health problems like heart disease, and stroke among others. (Leon et al., 2010).

Recommendations

For a healthy lifestyle, this report proposes the following lifestyle changes;

Patient A, and any other individual with similar lifestyle should adopt to an active lifestyle that involves physical activity like walking, running and any other exercises. Since Patient A has a normal BMI, he should engage in exercises at least three times a week to maintain the weight. Exercise include; cardiorespiratory fitness, body composition and muscular fitness

because these exercises improve on the heart and heart functioning. (National Institute of Health, 2017).

Patient A enjoys frozen foods which is not advised by medical workers and nutritionists. He should start feeding on balanced diet composed of carbohydrates, proteins, nutrients, fats, minerals and water. The patient is advised to eat variety of foods like vegetables, fruits, and low-fat dairy products, and should reduce on consumption of red meats like beef, lamb, veal, pork and sausages among others. These comprise the plan to maintain normal weight. (Gupta and Wood, 2019)

The patient should reduce, or quit alcohol consumption to prevent long-term effects like chronic diseases, high blood pressure, heart disease, strokes, liver and digestive problems. (Leon et al., 2010). He should also limit the consumption of drinks that are high in calories, and those with added sugars like sodas, fruit juices, and sport juices but instead drink plenty of water. (American Health Association, 2018).

The patient is strongly advised to quit smoking with immediate effect because it negative impacts on the heart and lungs by causing cancer, heart disease, stroke, lung disease and diabetes among others. Quitting is not easy but very possible and therefore, patient A should try it. (Rippe, 2018).

Conclusion

Generally, the respondent has not yet been faced with complex physiological challenges because he has never suffered from a heart attack or angina. In addition, the respondent has never gotten a stroke and neither of his close relatives like father, mother, sister and brother has ever gotten a stroke or heart attack. The patient may have survived getting a stroke or suffering from heart attack because of his manageable weight of 70kgs, he is also relatively tall, hence giving a Body Mass Index of 24.2 which indicates normality.

Overall, the Patient's lifestyle is not a desirable one because the questionnaire revealed that the patient does not do exercise more often, has high blood pressure of about 140/90mmHg, has high cholesterol, consumes alcohol in high volumes, and smokes in addition to having poor feeding habits. All these are risk factors of Cardiovascular diseases. In addition, these

risk factors do not only cause cardiovascular diseases but also other conditions like obesity and diabetes. (Diabetes UK, 2021).

Basing on the findings, the respondent should be aware that if nothing is done to adopt a healthy lifestyle characterized by a balanced diet, regular exercise, and healthy eating habits, the risks of getting cardiovascular diseases, diabetes, and becoming obese are high.

The health assessment has enabled me to learn the following;

This health assessment report has helped me understand that lifestyle has a great impact on one's physiology because lifestyle can either increase or reduce on the risks of getting physiological abnormalities. Therefore, the unhealthier the lifestyle, the more risks of getting physiological abnormal conditions.

This assessment also helped me to understand that lifestyle is associated with many factors but mainly are; exercise, diet, and eating habits. Therefore, from this assessment, I learn that one can achieve a healthy lifestyle by eating a balanced diet, doing regular exercises, and having healthy eating habits.

An individual may have a normal body weight but that does not mean that they stand low chances of getting cardiovascular diseases. High blood pressure and high cholesterol levels alone pose a risk of getting cardiovascular diseases even when the individual is not over weight.

References

British Heart Foundation (2020). UK estimates based on external patient, health and population data (ONS, GBN, IQVIA and health surveys).

Global Burden of Disease (GBD) 2019 UK estimates.

Roth, G.A., Mensah, G., Johnson, C., & Benach, M. (2020). Global Burden of Cardiovascular Diseases and Risk Factors, 1990-2019: Update from the GBD 2019 study. Journal of the American College of Cardiology. Global Burden of Diseases (GBD). The Institute for Health metrics and evaluation. (IHME).

Diabetes UK (2018). Diabetes: Facts and Figures.

Bottle et al. (2019). Routes to diagnosis of heart failure(England). Heart.
<https://heart.bmj.com/content/104/7/600>

Rippe J.M. (2018). Lifestyle Strategies for Risk Factor Reduction, prevention, and Treatment of Cardiovascular Disease: American Journal of Lifestyle Medicine.
<https://doi.org/10.1177/1559827618812395>

American Heart Association. (2018). Council on Lifestyle and Cardio metabolic Health.
https://professional.heart.org/professional/MembershipCouncil/ScientificCouncils/UCM_322856_Council-on-Lifestyles-and-Cardiometabolic-Health.jsp.

World Health Organization Regional Office for Europe (2014). Obesity and inequalities. Guidance for addressing inequalities in over weight and obesity. Copenhagen: WHO Regional office for Europe.

Gupta, R., and Wood, D. A. (2019). Primary prevention of ischemic heart disease: populations, individuals, and health professionals Lancet 2019; 394: 685-96.

Leon et al. (2010). Alcohol increases circulatory diseases mortality in Russia: acute and chronic effects or misattribution of cause? International Journal of Epidemiology, 39: 1279-90.

Appendix

