

SUMMER INDEPENDENT LEARNING

Subject/Group	BTEC Diploma in Health and Social Care (Year 12 – 13)
Topic	Unit 4 - Enquiries into Current Research in Health and Social Care
Hours	14 hours
To be completed by	This work must be completed and handed in to your subject teacher on the first day of term.

Background/Context

There are many reasons why research is carried out into contemporary health and social care issues, for example to explore the effect of diet on health and wellbeing or the provision and impact of addiction centres in the local community.

As a health and social care professional you will need to understand the purpose of research, how it is carried out and the importance of research for improving the wellbeing of those using health and social care services.

This is an externally assessed unit made up of Types of issues where research is carried out in the health and social care sector, Research methods in health and social care and Carrying out and reviewing relevant secondary research into a contemporary health and social care issues.

Don't forget to use your Health and Social Care textbooks and other resources to help you complete this work.

Unit 4 is found in the BTEC Health and Social Care Student Book 2.

There are TWO parts to this work. BOTH parts are mandatory.

1. A variety of activities aimed at developing your understanding of enquiries into research.
2. Research document to read and analyse.

PART ONE

A1 – Purpose of Research

The purpose of research is to find out information or gain knowledge. Research is a systematic or orderly procedure that explores issues to establish facts or reach new conclusions.

Activity 1

There are FOUR key purposes of research in health and social care. **What are they?**

1	
2	
3	
4	

Activity 2

Using reputable websites, identify TWO examples of research that have been carried out in health and social care within the last five years.

	Name of research projects, the web links and a summary of the research conducted
Health	<p><u>Research article 1</u></p> <p>Title of research project:</p> <p>URL link:</p> <p>Summary of the research that has been conducted:</p>

	<p><u>Research article 2</u></p> <p>Title of research project:</p> <p>URL link:</p> <p>Summary of the research that has been conducted:</p>
Social Care	<p><u>Research article 1</u></p> <p>Title of research project:</p> <p>URL link:</p> <p>Summary of the research that has been conducted:</p> <p><u>Research article 2</u></p> <p>Title of research project:</p> <p>URL link:</p> <p>Summary of the research that has been conducted:</p>

Activity 3

As part of your learning, you need to have a clear understanding of the key terms used within this Unit.

Define the following key terms used in research.

Command verb/key terms	Definition/Explanation
Article	
Issue	
Health and social care practice	
Research methods	
Qualitative research analysis	
Quantitative research analysis	
Primary research	
Secondary research	
Ethical issue	
Literature review	

Activity 4

Research involves the collection of data. Data can be numerical, or it can be descriptive. Numerical data can be statistically analysed whereas descriptive data cannot be measured. There are several methods used to collect the data. In the table below are examples of the commonly used research methods.

There are several research methods which you need to know about.

Below is a table which includes most the research methods you will come across in Unit 4.

- Define each research method
- Identify ONE strength and ONE weakness for EACH research method

Research methods	Strengths	Weakness
Observations Definition:		
Interviews Definition:		
Focus Groups Definition:		
Experiments Definition:		
Surveys Definition:		
Questionnaires Definition:		
Case studies Definition:		

PART TWO

Instructions

On the next page is a research article for you to read.

- Read the entire document
- Highlight any words/terms you DO NOT understand. Look the up and write down their meaning in language you can understand. Write this next/near to section in the article
- Identify the research methods used in this article
- Explain how EACH research method has been used to gather the evidence for this article. You need to know about the different research methods so activity 4 has to be completed really well

Article 1: Health Research

Blood test could provide an early arthritis warning

Monday March 23 2015

Arthritis causes pain and stiffness of the joints.

"Arthritis breakthrough as new test diagnoses condition up to a decade earlier," the Mail Online reports. The test measures proteins linked with arthritis.

The study aimed to see whether a blood test could be developed that could distinguish between different types of early stage arthritis.

The study included groups of people with established diagnoses, including those diagnosed with early-stage osteoarthritis (so-called "wear and tear arthritis") and rheumatoid arthritis (caused by the immune system).

It then measured and compared levels of different proteins in their blood.

Overall, it found that looking at a combination of the levels of three proteins in the blood could distinguish between the different types of early-stage arthritis. This suggested such a test could have promise.

This is still early-stage research. Further study needs to look at whether this test is reliable for identifying and distinguishing between the different forms of early-stage arthritis in practice.

Most importantly, it needs to be seen whether use of the test leads to earlier treatment, and whether this leads to an improvement in patient outcomes.

Can arthritis be prevented?

The cause of rheumatoid arthritis, where the immune system starts attacking the tissue surrounding the joints is unknown. Therefore, it is unclear how the condition could be prevented. However, there is some evidence that people who don't smoke have a lower risk of getting the condition.

There is no guaranteed way of preventing osteoarthritis. However, taking regular exercise, keeping your muscles strong, and achieving or maintaining a healthy weight will help to reduce the risk.

Where did the story come from?

The study was carried out by researchers from the University of Warwick and other institutions in the UK. No sources of funding were reported. Some of the authors have a patent based on this work.

- early non-RA inflammatory arthritis – people with early symptoms of an inflammatory arthritis, but not having the diagnostic features of RA
- a healthy control group with no joint problems.

The researchers took blood samples from these people and samples of the fluid in the joints (synovial fluid) from those with early-stage arthritis. They used advanced laboratory techniques to measure the amount of different proteins in these fluids. They particularly looked at the amount of:

- anti-cyclic citrullinated peptide (CCP) antibodies – a marker for RA
- citrullinated protein – a marker for inflammation
- hydroxyproline – a building block that is part of the protein collagen – a structural protein found in cartilage and bone.

They compared the levels of these markers in people from the different groups. They also assessed whether looking for a particular combination of levels of these markers would allow them to tell the different groups apart.

What were the basic results?

The researchers found that compared to healthy controls, blood levels of citrullinated proteins were increased in people with early OA and early RA. Generally, people with early arthritis tended to have higher levels of these proteins in the blood, while in advanced disease, levels were lower in the blood and higher in the joint fluid.

Levels of citrullinated proteins were not increased in people with other non-RA early-stage inflammatory arthritis.

Anti-CCP antibodies were found mainly in the blood of people with early RA.

Compared to health controls, increased levels of hydroxyproline were found in people with early OA and early non-RA, but not in people with early RA.

The researchers found that looking at the levels of all three proteins enabled them to discriminate between people with early OA, early RA, other non-RA early inflammatory arthritis, and healthy joints. This combination test correctly identified:

- 73% of people with early OA
- 57% of people with early RA
- 25% of people with non-RA early inflammatory arthritis
- 41% of people with healthy joints.

The test also correctly identified:

- 87% of people who did not have early OA
- 91% of people who did not have early RA
- 76% of people who did not have non-RA early inflammatory arthritis
- 75% of people who did not have healthy joints.

How did the researchers interpret the results?

The researchers say their study provides a novel biochemical blood test that could be used for the diagnosis and discrimination of early-stage arthritis. They say that this could help to support improved treatment and patient outcomes.

Conclusion

This laboratory study suggests that for people presenting with early joint symptoms, examining blood levels of a combination of proteins could help to distinguish people who have early-stage OA from those who have early-stage RA or other inflammatory arthritis.

However, this study is in the early stages and so far has only looked at relatively small samples of people with confirmed diagnoses of these different conditions. A lot of further work needs to be done to examine the accuracy of such a blood test, and to see whether it could reliably identify and distinguish between people with these conditions presenting to doctors in real world practice. These studies should assess whether it offers an improvement on the current approach to diagnosis based on symptoms, clinical examination, imaging findings and other blood tests currently used – such as measurement of inflammatory markers, rheumatoid factor, or anti-CCP antibodies.

Even if such studies find that the test performs well, it is likely that it would not replace all other diagnostic tests, instead being used in combination with other methods, especially as it performed better at detecting some forms of arthritis than others.

Most importantly, it also needs to be seen whether using this blood test as a diagnostic method would actually lead to improved disease outcomes for people with arthritis, as suggested in the news reports.

While several of the risk factors associated with OA are unavoidable (e.g. increasing age, female gender, previous joint damage or abnormalities), maintaining a healthy weight and staying active could help prevent onset of the disease. RA is an autoimmune disease (where the body's own immune cells attack the joints) with no established cause. However, smoking is associated with the development of the condition.

Analysis by Bazian
Edited by NHS Choices

Links to the headlines

Arthritis breakthrough as new test diagnoses condition up to a decade earlier – with just a single drop of blood. Mail Online, March 22 2015

DISCOVERY of proteins could lead to diagnosis of arthritis up to ten years before symptoms. Daily Express, March 22 2015

Links to the science

Ahmed U, Anwar A, Savage RS, et al. Biomarkers of early stage osteoarthritis, rheumatoid arthritis and musculoskeletal health. Scientific Reports. Published online March 19 2015

Acknowledgements: © NHS

Metacognition Work

Enquiries into current research in health and social care is a challenging unit. You will be expected to know and understand the different key terms and terminology. You will be expected to read several research documents and be able to analyse the information in them.

For this part of your SIL we would like you to reflect on your strengths and weaknesses in completing this unit. Identify your strengths and weaknesses.

Consider the following questions: How can your strengths support you in your studies? What can you do to ensure your weaknesses don't prevent you from getting a high grade in this unit? What can you do to ensure you overcome them? What kind of resources and support will you need to help you? How will you know you have successful at overcoming your weaknesses?

Write down your reflections, considering the above questions.

You can write your answers on paper is you do not have access to IT resources