Understanding and managing depression in older people

Jules Knight

Abstract
Clinicians do not always recognise depression in older people as they attribute symptoms to the ageing process and the effects of failing health. Similarly, older people do not always appreciate that their symptoms relate to their mood. Understanding how depression affects older people can improve access to support, thereby improving overall health and quality of life. To ensure these outcomes we need a workforce with excellent communication skills that supports therapeutic relationships, promotes recognition of symptoms, and enhances assessment, diagnosis, treatment and management.

Aim and intended learning outcomes
This article aims to explore depression in older people, and promote understanding and recognition of depression, as well as explore the nurse’s role in assessment, diagnosis, treatment and management in hospital and community settings.

After reading this article and completing the time out activities you should be able to:

» Summarise the common symptoms of depression and how they affect older people.

» Describe the concept of therapeutic relationships and explore how their development can support greater understanding of depression in older people.

» Confidently explore depression and depressive symptoms with an older person.

» Discuss management options for depression with patients and adopt a person-centred approach to negotiate a support plan.

» List the support services in your locality, including those offered by health and social care, and the third sector.

Relevance to the Code
Nurses are encouraged to apply the four themes of The Code: Professional Standards of Practice and Behaviour for Nurses, Midwives and Nursing Associates (Nursing and Midwifery Council (NMC) 2018) to their professional practice. The themes are: prioritise people, practise effectively, preserve safety, and promote professionalism and trust.

This article relates to the Code in the following ways:

» To prioritise people, we must pay special attention to promoting well-being, preventing ill health, and meeting the changing health and care needs of people during all life stages.

» To practise effectively we must continue to hone our communication skills so that we can recognise depression in older people and support therapeutic discussions using methods that support health needs.

» The Code states that to preserve safety we must work within the limits of our competence and make timely referrals to other services when required.

Introduction
The World Health Organization (WHO) (2017a, 2017b) estimates that 4% of people globally have depression with prevalence rates peaking at 8% of females aged 55-74 years and 6% of males. In the UK, 10% to 15% of people aged 65 and over living in the community have depression, a figure that increases to 40% of those living in care homes (Mental Health Foundation 2016).

More people are now aged over 60 than are under 18, with the numbers of older people...
Increasing by 21% in the ten-year period between 2005-06 and 2015-16 (Macrory 2016). However, people are not necessarily living longer in good health. Half of those aged 65 years and over have at least two long-term conditions, and multiple morbidity is the norm for people aged 85 years and over (Barnett et al 2012). Depression in older people is linked to poor physical health and frailty (Soysal et al 2017) and, as the number of health problems increases, so does the incidence of depression (Kingston et al 2018). Cardiovascular diseases, diabetes, chronic obstructive pulmonary disease and musculoskeletal disorders are associated with depression, anxiety and other mental health problems (Naylor et al 2012, Worrall-Carter et al 2012).

Depression decreases quality of life for older people, affects their sense of well-being, increases functional and cognitive impairment, reduces their ability to recover from illness, and increases mortality. It also has cost implications for the health service (Manthorpe and Iliffe 2010, Stojanović-Špehar et al 2011). However, older people usually respond well to treatment for depression, which has a positive effect on their quality of life and, potentially, on the NHS (Rodd et al 2011).

Although the correlation between depression and physical health is understood, depression is under-recognised, under-diagnosed and under-treated (Manthorpe and Iliffe 2010). The reasons for this are complex and multifactorial, but one reason is that broaching depression with older people can be challenging. This is because it can be difficult to contextualise symptoms that older people attribute to ageing (Chew-Graham et al 2012). Even if the symptoms are recognised, the stigma of mental health may also prevent older people from discussing their feelings or seeking help (Stark et al 2018), and consequently they have no access to the treatment on offer (Chew-Graham et al 2012). The Royal College of Psychiatrists (RCPsych) (2018) suggests that, like older people, health professionals tend to view depression as an inevitable consequence of ageing and so do not view mental health support for older people as a priority.

Over recent years, older people's services have benefited from an integrated approach with social care and close working relationships with primary care and community services. NHS England (2014) advocates the integration of services across traditional boundaries to improve outcomes. A good example of this is the comprehensive geriatric assessment (CGA), which provides a framework for assessment and diagnosis of people living with frailty. The CGA also pulls together the skills, including mental healthcare, of multidisciplinary teams (MDTs) to develop person-centred care plans that support recovery (Ellis et al 2011).

The NHS ten-year plan (NHS England 2019) builds on this model and commits to developing fully integrated community-based healthcare. This involves primary care networks (PCNs), which will focus on preventing ill health and keeping people out of hospital through crisis prevention, rehabilitation, end of life care and care for people in care homes. The formation of PCNs involves nurses coordinating and leading care for older people in the community, moving away from an episodic to a more person-centred approach with the care provided recognising the needs and preferences of older people, their carers and families where applicable. Integrated care teams will have access to specialist support, providing an opportunity for practitioners to learn from each other. For example, access to mental health workers should promote integrated care teams’ confidence and understanding of older people’s mental health (Waterworth et al 2015).

To coordinate such care, nurses need to take a holistic approach. This requires an understanding of the interconnectivity between physical and mental health to ensure that specialist support and advice is sought. In caring for older people with depression, this involves having access to specialist mental health support.

This article considers how depression is identified and treated in older people. It explores the development of therapeutic relationships, and considers how such relationships can support difficult conversations about depression between nurses and patients. It also considers treatment and support options, including when more specialist intervention is required.

**Recognising and understanding depression**

Depression is a clinical syndrome, or group of symptoms (Table 1). There are three core symptoms of depression: low mood, anhedonia, which is the inability to feel pleasure in activities that were once pleasurable; and reduced energy levels, and these symptoms must persist for at least two weeks (WHO 2001). In major depression the core symptoms are present with five others and the combination of these has a significant effect on daily life. Depressive symptoms...
Symptoms for Recent bereavement
- Impaired concentration/ability to think
- Changes in psychomotor activity
- Reduced energy levels/
- Living in a care home
- Chronic illness
- Sleep disturbance
- Be slow in moving and thinking.
- Anhedonia
- Persistent sleep problems
- Some ethnic groups are at higher risk, for example, people of South Asian origin because of
- Suicidal thoughts
- Changes in appetite with weight
- Look sad and anxious.
- Low mood
- Symptoms not
- Major physical illness or hospital admission over the previous three months
- Loss of confidence and self-esteem
- Dementia
- Social isolation and loneliness
- Fuel poverty
- Feelings of guilt
- High levels of home care, including residential care
- Living in a care home
- Major physical illness or hospital admission over the previous three months
- Persistent sleep problems
- Recent bereavement
- Social isolation and loneliness
- Some ethnic groups are at higher risk, for example, people of South Asian origin because of the
- higher prevalence of cardiovascular disease in this population

Developing therapeutic relationships

Talking about depression with older people is essential. By virtue of nurses’ frequent contact with older people, they are in an excellent position to do so. Enhanced communication and the development of therapeutic relationships are common to all nursing interventions.

A therapeutic relationship is the process of engagement with a patient (Segaric and Hall 2015), which is intended to improve their health status and promote well-being (Williams 2016). Trust and rapport are essential for the development of therapeutic relationships (Price 2017): trust requires effective communication, honesty, respect, commitment, and clear and consistent reasoning (Price 2017); rapport involves understanding the patient’s perspective to support holistic exploration of information pertinent to their lives, which leads to informed decisions and choice about care (Ross 2013). This humanising approach to care supports conversation about people’s mental health while acknowledging their history, and supporting their personal choices, goals and abilities (McCormack et al 2015).
FURTHER RESOURCES
Age UK is the UK’s largest charity dedicated to helping people make the most of later life. It offers befriending and other local services. Check the website for local numbers or call the advice line 0800 067 6669 www.ageuk.org.uk
Cruse Bereavement Care is the charity for bereaved people in England, Wales and Northern Ireland. It offers support, advice and information to children, young people and adults when someone dies, and works to enhance society’s care of bereaved people. Helpline: 0808 808 1677. Its sister organisation Cruse Scotland operates in Scotland. Cruse Scotland Helpline: 0845 600 2227 www.cruse.org.uk
Depression UK promotes mutual support between individuals affected by or at risk of depression, with the aim of encouraging self-help, recovery and personal growth. It supports people to share their thoughts and problems with others living with depression. depressionuk.org
Mind provides advice and support to people experiencing a mental health problem www.mind.org.uk
Reading Well: Books on Prescription is a website detailing books for self-help. The scheme is endorsed by Public Health England, Psychiatrists and supported by public libraries, so the suggested books are available for loan reading-well.org.uk
Samaritans offers a safe place to talk at any time. The person calling does not need to be suicidal. Telephone: 116 123 in UK. Email: jo@samaritans.org www.samaritans.org/how-we-can-help-you
The Silver Line operates the only confidential, free helpline for older people across the UK open 24 hours a day, seven days a week. It also offers telephone and letter friendship schemes. Helpline: 0800 870 8090 www.thesilverline.org.uk

Managing depression
The stepped-care model (NICE 2009) provides a framework for identifying and accessing the most effective interventions for adults

TIME OUT 3
Rating scales
Find out what rating scales are used in your locality. You should familiarise yourself with these as they can provide a valuable insight into the types of questions that can be helpful.

Box 2. Types of communication
- Active listening
- Being authentically present – spending time
- Being genuine
- Body language
- Facial expression
- Making eye contact
- Showing empathy
- Showing warmth
- Silence
- Touch
- Verbal – asking open and closed questions
- Written information
with depression. This approach requires that the least intrusive and most effective interventions are offered. NICE (2009) recommends that all known and suspected presentations of depression require assessment, support, psychoeducation, active monitoring, and referral for further assessment and interventions. It details pathways for adults with depression, so it is advisable for nurses to understand the referral pathways and treatment options to match them to patient needs and the support services available locally. The guidance is being reviewed, however, and may change in line with the latest evidence.

Most older people with depression are managed in primary care, with only 6% being referred to specialist mental health services (RCPsych 2018). If an older person presents with mild symptoms of depression that have little functional effect on their everyday life, engaging therapeutically with them should enable exploration of their concerns and how they are affected.

Providing health education is the first step for all patients with suspected depression. It is important to have an appreciation of the patient’s background to provide a holistic approach to suggested strategies. Providing a sense of hope and an appreciation that recovery is possible are important as there is evidence that older people are unsure whether depression is treatable (Stark et al 2018).

With timely and appropriate support an older person with depression can recover as well as a younger person can (Mueller et al 2017).

People with mild depression may find that the symptoms resolve after a few weeks. It is important for nurses to monitor the person and encourage them to re-engage with them so they can be actively monitored (Haddad et al 2011). The RCPsych (2014) has produced downloadable information on depression in older people. It details self-management strategies and treatment options. Written information such as this supports self-reflection and can provide a framework for engagement with potentially difficult issues. The Age UK (2019) website also includes information for patients and an excellent self-help tool.

A good knowledge of local support networks is essential to developing a care plan. Nurses understand the links between depression and long-term health conditions, as well as socio-economic factors such as poverty (Coventry et al 2011). Local social prescribing schemes may be available to support social engagement and reduce financial poverty. If loneliness is a concern, for example, befriending services can provide social contact, while referral for a benefits check may improve the financial situation (Chew-Graham et al 2012). There is little evidence for the effectiveness of these interventions, but there has been local investment in them (Centre for Reviews and Dissemination 2015).

For older people with moderate to severe depression or those who have not responded to health education the main options to consider are antidepressants, improving access to psychological therapies (IAPTs) or a combination of both (NICE 2009). Discussing these options with older people to learn about their preferences, and expected goals and outcomes, supports the development of person-centred care plans (National Voices 2013).

**Antidepressants**

Antidepressants work well in the management of depression in older people and they are prescribed in the same way as they would be for people under 65 (Allan and Ebmeier 2013). NICE (2009) advises that first-line treatment should be a selective serotonin reuptake inhibitor (SSRI). People with depression have lower levels of serotonin in their brain. Serotonin is a neurotransmitter that carries chemical messages between nerve cells in the brain, and is thought to have a positive effect on mood, emotion and sleep. SSRIs work by blocking the reuptake of serotonin to nerve cells, which means that there is more available to pass messages between cells and this has a positive effect on mood (NHS 2018).

Explaining how antidepressants can improve mood is important. They should not be prescribed without consultation, particularly as older people may have misconceptions about how antidepressants work, with some believing

---

**Box 3. The case-finding questions**

During the last month, have you often been bothered by:

- Feeling down, depressed or hopeless?
- Having little interest or pleasure in doing things?

If the person answers ‘yes’ to either question:

A practitioner who is competent in mental health assessment should:

- Review the person’s mental state and associated functional, interpersonal and social difficulties
- Consider using a validated measure for symptoms, functions and/or disability

A practitioner who is not competent in mental health assessment should:

- Refer the person to an appropriate professional – if this is not the person’s GP, inform the GP of the referral

When there is a positive outcome, the severity of the depression should be assessed using a rating scale recommended by the National Institute for Health and Care Excellence (2009), such as:

- Patient Health Questionnaire-9
- Geriatric Depression Scale
- Hospital Anxiety and Depression Scale

---

nursingolderpeople.com © RCN Publishing Company Limited 2019
that they simply have a sedative effect. Others may be concerned that antidepressants are addictive (Stark et al 2018) and this issue should be addressed.

When antidepressants are taken as prescribed, patients should be aware that it may take up to two weeks to begin to feel the benefit and the full therapeutic benefits may not be felt for 6–8 weeks (Chew-Graham et al 2011). Common side effects should be discussed so that patients know what to expect and how to manage them, as there is evidence that patients who understand antidepressants are more likely to take them (Haddad et al 2011). Antidepressants should usually be taken for a minimum of six months but can be taken for longer if necessary. Older people should be aware that antidepressants treat the symptoms of depression, but not always its causes, so it is helpful to use them in combination with psychological therapies.

Improving access to psychological therapies
IAPTs, or talking therapies, are evidence-based treatments given by trained and accredited practitioners for people with depression and anxiety. They allow people to explore their thoughts and feelings, and consider how these affect their mood and behaviour. This helps to identify any patterns that could be changed, and explore why they have negative feelings and where they have come from to support positive changes (Mental Health Foundation 2019).

GPs are the main source of referrals for IAPTs (Pettit et al 2017), but any professional can refer and patients can self-refer, so talking to them about what IAPTs can offer and how they can improve their mood is essential. This is particularly important because older people tend to be more confident when talking to nurses, who they think have more time for them and will not perceive them as burdensome (Waterworth et al 2015).

The overall uptake for IAPTs by older people has been poor, however. The Department of Health (DH) (2011a, 2011b) set a target of 12% of older people accessing IAPT services, but in 2013/14 only 7% of the available places were taken by older people (Mental Health Foundation 2016). Once older people access IAPTs they usually engage more readily and benefit more than do younger people, but difficulties seem to arise with referrals (Pettit et al 2017). Barriers to referral include the older person’s attitudes towards mental health and treatment, and communication between the older person and their GP (Pettit et al 2017).

Specialist mental health services
The stepped-care model (NICE 2009) recommends urgent referral to specialist mental health services for people who have actively suicidal ideas or plans, psychotic symptoms, severe agitation accompanying severe symptoms, and severe self-neglect. Suicide is the greatest concern, particularly as older people who attempt suicide are more likely to die than their younger peers. One in eight people who die by suicide are aged over 65 and men aged over 75 have the highest rate of completed suicide of any age or sex demographic. Women aged over 65 come a close second to their younger peers (Macrory 2016).

Broaching the subject of suicidal thoughts with a patient can feel daunting, but by engaging them in conversation nurses can help identify strengths and protective factors (Haddad et al 2011). This is often a frightening and confusing time for older people, who may not fully appreciate the need for specialist support, so it is important that nurses reassure them and explain what is likely to happen. Nurses can work with the older person’s GP to support a referral to specialist mental health services and, as the clinicians who most likely know the person best, nurses can provide an invaluable link to continued support.

To continue professional development, it is essential that nurses have time to reflect on their work and discuss patients’ cases with their peers. This will support best practice and help develop robust referral pathways and connections with specialist services.

TIME OUT 4
Local services
It is important to know what support services, including statutory and voluntary services, you have in your area and how you access them. Individually or with your team make a resource file of services that support different groups and health issues, and make connections with mental health workers in your locality

Conclusion
Nurses are in an excellent position to challenge the concept of depression in older people by highlighting how it uniquely presents itself in this group, as well as by supporting open conversations with older people and wider society. The Prime Minister’s Challenge on Dementia (DH 2012) has helped to raise the profile of dementia. By initiating conversations about one of the most feared conditions of older age, it has helped to increase diagnosis rates, while enhancing understanding of the disease and the support people with dementia need (Burns 2014).
Unfortunately, depression in older people has not received this level of attention (Wilkinson et al 2018), but the development of PCNs will enhance working relationships across organisations with a shared purpose to support older people. This collaboration should break down the traditional silos, encourage multidisciplinary working, and support an environment for shared learning and development, all of which may enhance understanding of the holistic care needs of older people. The good news is that when older people with depression are supported with management strategies and treatment, they can expect a good recovery.

References


Department of Health (2011) Prime Minister’s Challenge on Dementia: Delivering Major Improvements to Dementia Care and Research by 2015. DH, London.


TIME OUT 5

The Code

Nurses are encouraged to apply the four themes of the Code (NMC 2018) to their professional practice. Consider how understanding and managing depression in older people relates to the Code

TIME OUT 6

Reflection

Now that you have completed the article you might like to write a reflective account as part of your revalidation. Guidelines to help you are at rcni.com/reflective-account
Managing depression in older people

TEST YOUR KNOWLEDGE BY COMPLETING THIS MULTIPLE-CHOICE QUIZ

1. What percentage of people are estimated to be living with depression in UK care homes?
   a) 4%
   b) 8%
   c) 32%
   d) 40%

2. Depression is commonly associated with what long-term condition?
   a) Acute kidney injury
   b) Diabetes
   c) Urinary tract infection
   d) Dermatitis

3. A barrier to older people seeking treatment for depression is:
   a) Stigma
   b) Belief that symptoms are a consequence of ageing
   c) Ageist attitudes of health professionals
   d) All of the above

4. Which of the following statements about primary care networks is true?
   a) Keeping people out of hospital is the focus
   b) Reactive provision of GP appointments is a core aim
   c) Social care services will be excluded from networks
   d) Speedy hospital admission is the focus

5. Which of the following is not one of the core symptoms of depression?
   a) Weight change
   b) Low mood
   c) Loss of pleasure in activities
   d) Reduced energy levels

6. A therapeutic relationship is characterised by:
   a) Indifference
   b) Trust
   c) Longevity
   d) Apathy

7. A person may be depressed if they:
   a) Speak fast
   b) Move quickly
   c) Speak in a flat monotone
   d) Dress smartly

8. An intervention at step 1 of NICE’s stepped-care model for depression is:
   a) Electroconvulsive therapy
   b) Medication
   c) Inpatient care
   d) Assessment

9. What percentage of older people with depression are referred to specialist mental health services?
   a) 6%
   b) 12%
   c) 50%
   d) 60%

10. NICE recommends which class of antidepressant as first-line treatment?
    a) Tricyclic
    b) Selective serotonin reuptake inhibitor
    c) Monoamine oxidase inhibitor
    d) Serotonin and norepinephrine reuptake inhibitor

How to complete this assessment

This multiple-choice quiz will help you test your knowledge. It comprises ten multiple choice questions broadly linked to the previous article. There is one correct answer to each question. You can read the article before answering the questions or attempt the questions first, then read the article and see if you would answer them differently.

You may want to write a reflective account. Visit rcni.com/reflective-account

Go online to complete this multiple-choice quiz and you can save it to your RCNi portfolio to help meet your revalidation requirements. Go to rcni.com/cpd/test-your-knowledge

The answers to this quiz are:

This activity has taken me __ minutes/hours to complete. Now that I have read this article and completed this assessment, I think my knowledge is:

Excellent □  Good □  Satisfactory □  Unsatisfactory □  Poor □

As a result of this I intend to: __________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________