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Exploring anxiety

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Introduction

An overall aim of this free course is for you to develop an understanding of mental health science (focusing on anxiety and depression) from contemporary biological and psychological perspectives. At Masters level you will be expected to think critically about issues, models and frameworks and their application in different contexts, to take a proactive 'questioning' approach, to put forward your views, and to argue a case convincingly backed up with evidence that supports your view. These are skills that you will continue to develop if you move on to postgraduate study. But before we broach these topics, it is first worth clarifying some concepts, dispelling some common misconceptions, and to help provide the context to inform your studies.

This free OpenLearn course has been developed from the Open University course *S826 Introduction to mental health science* (Stage 1 in the Masters in Mental Health Science), and is suitable preparatory reading if you are considering moving on to postgraduate study in this area. A number of related free courses are also available on OpenLearn. They are recommended to complement your studies, can serve as background reading, introduce you to underlying concepts, and provide a basis that will help to support and broaden your knowledge and understanding of topics further. You can find these in the Further Reading section.

Please note that a glossary of terms is not provided on this course. However, you may find it helpful to keep one as you study. The course may contain some specialist vocabulary, terms or ideas with which you are unfamiliar, such as a medical condition, a complex technical term or a specific procedure or assessment. At this more advanced level of study, it is expected that you use your initiative and find the missing information for yourself, perhaps using medical dictionaries or encyclopaedias, or by conducting an online search using a search engine. Searching for information is also an overt feature of study at Masters level, and will help you to better prepare for postgraduate study.

Learning Outcomes

After studying this course, you should be able to:

- understand anxiety from biopsychosocial perspectives
- discuss contemporary issues in mental health science related to anxiety
- recognise different lines of evidence and appreciate the uncertainty, ambiguity and limits of current knowledge in the study of mental health science.

1 Common misconceptions about mental ill health

The following section is based on resources provided by the World Health Organization, MIND, Rethink Mental Illness, SANE, NAMI, the US Department of Health and Human Services, the Australian Government Department of Health and the Canadian Mental Health Association, all of whom are gratefully acknowledged.

Consider the statements that follow, and click to reveal the truth behind them.

- Mental illness is not a ‘real’ illness.
- FALSE. Mental ill health is not simply the regular ups and downs of life. It creates distress which does not simply go away by itself, but can be managed through effective interventions. While some people who experience mental illness may act in ways that are unexpected or appear different to others, these cannot be generalised. The behaviours or experiences associated with mental illness are not by ‘choice’. Equally, like anyone else, people with a history of mental ill health may make poor choices or behave unexpectedly for reasons that are *unrelated* to symptoms of their illness. No one would ‘choose’ to have a mental illness. It can sometimes be challenging to relate to the symptoms and personal experiences of people living with a mental health condition, if one has not experienced these for themselves, but this does not mean that their condition is somehow not real.

- People with mental illness are typically violent, unpredictable and dangerous.
- FALSE. Having a mental health condition does not make a person more likely to be violent or dangerous. The causes of violence are complicated, and mental illness is not a predictor of violence. Few violent acts can be attributed to individuals living with a serious mental illness. The abuse of illicit drugs and alcohol may perpetuate violent crimes. People who experience mental illness are often amongst those who are excluded from communities, vulnerable, and more likely to be *victims* of violent crime or of self-harm than of violence towards others. The false perception, popularised in the media that people with mental illness are typically violent, unpredictable and dangerous, is amongst the most damaging of stereotypes.

- People who experience mental illness are unable to work.
- FALSE. Depending on the severity of their condition, living with mental illness does not necessarily mean that a person is incapable of seeking or maintaining employment. They may require additional support or suitable working arrangements provided by employers. Those with more serious conditions may face some barriers.

- Mental illness is a result of ‘bad parenting’.
- FALSE. Mental illnesses are complicated conditions that arise from a combination of genetics, biological, social, environmental, life experiences, and other influences and not simply a consequence of parenting. 1 in 5 children aged between 13 and 18 will have a mental illness. Around half of all lifetime cases of mental illness begin before the age of 14. Parents and family members have a major role in support and recovery.

- There is no such thing as mental illness in adolescence; it’s just puberty and signs of ‘teenage awkwardness’.
- FALSE. Errant, ‘challenging’ or withdrawn behaviour, and sudden changes in mood at school or at home during adolescence are often seen as a sign that a young person is simply ‘acting out’ their frustration at struggling academically or socially. Adolescence is a period of significant physical and emotional change, brain development in particular, so it is important to understand the underlying reasons for changes in mood and behaviour. Mental illness affects people of all ages, including adolescents. Specific criteria for a clinical diagnosis will need to be met, and it is important to distinguish mental ill health from ‘transitional’ teenage behaviour, moving towards adulthood. Up to half of all mental health conditions show first signs before the age of 14. However, it is estimated that up to 20% of those diagnosed do not receive the treatment and support they need.

- There is no recovery from mental illness − once you have a diagnosis, it’s all downhill from there.
- FALSE. Mental illness is not always a chronic, lifelong condition. People who experience mental illness can recover and lead fulfilling lives, learning to manage symptoms with support and appropriate treatments. Many people living with mental health conditions are able to live, work, learn and participate fully as active and productive members of communities. When treated appropriately and early, some people can recover with no further episodes of ill health. For others, ill health may recur throughout their life, and will require longer-term management to help people live full and fulfilling lives. Counselling can help to avoid reliance on harmful coping strategies like drinking, as well as to help come to terms with life experiences. Often a combination of pharmacological (medication) and psychological (talking) therapies provides the best outcomes. Individuals have different treatment needs; talking with mental health professionals will help to determine the best treatment plan towards recovery from mental ill health.

- Depression is inevitable as one gets older − it’s a sign of old age.
- FALSE. Depression is not inevitable in old age. However, older adults do have a greater risk of depression associated with losing a partner later on in life or as an early sign of other progressive illness (including neurodegenerative diseases and dementia).

- Mental illness is the sign of a ‘weak character’ − people with depression are just ‘lazy’.
- FALSE. Ill health, whatever the cause, is not a character flaw or personal weakness. People with mental ill health are not ‘lazy’, ‘weak’ or able to ‘snap out of it’. The stereotype of a clinically depressed person as being lazy, or simply lacking motivation shows a lack of understanding of the condition. Multiple factors contribute towards mental illness, including life experiences, trauma, family history, physical illness or biological factors. It is not entirely clear why some people are more ‘resilient’ to developing mental illness than others after, for example, witnessing a traumatic event, being a victim of a crime, or longer-term exposure to traumatic experiences, such as military conflict, natural disasters or abuse. Not everyone exposed to a traumatic event will experience post-traumatic stress disorder (PTSD) for example, but this is not related to some notional concept of being ‘strong-’ or ‘weak-minded’.

- Prevention doesn’t work − it’s impossible to prevent mental illnesses.
- FALSE. If risk factors are known (e.g. exposure to a specific trauma or known biological or environmental stimuli which can trigger mental health problems), then strategies aimed at preventing these would affect mental, emotional and behavioural outcomes in children and adolescents, as well as adults.

- People with mental illness should be isolated from the community and kept in institutions.
- FALSE. Many people with a mental illness recover quickly and do not necessarily need hospital care. Others have short admissions for treatment. Improvements in healthcare provision mean that most people can live within the community while receiving the continued care and support they need, without being confined to psychiatric institutions, as was more common in the past. Some people, however, will require long-term specialist hospital care, and sometimes against their will, if they are deemed to be particularly vulnerable or likely to cause harm to themselves or to others, for example.

- People with depression are just ‘sad’ − they need cheering up.
- FALSE. There is a misconception that people who are clinically depressed can simply will away their mood, shake it off, pull themselves together and cheer up. Depression has a biological basis that affects physiological functioning. It’s not as simple as a psychological pick-me-up. Treatments such as cognitive therapy combined with medication can help address the symptoms of depression.

Activity 1 Reflecting on common misconceptions

Allow 10 minutes

Reflect on the issues raised in this section.

- What are your own thoughts and views on each of these points?
- Can you offer further or alternative perspectives, drawing on your own personal or professional experience?

Discussion

It's more than a simple matter of awareness or of public perception. Different perspectives and insight gained through personal as well as professional experiences are important to understanding mental illness, and those who are affected by, and living with mental health conditions. The way we perceive an issue, in what light we view a particular topic, greatly influences our thoughts and behaviours, and how we relate to, understand or come to terms with our own and other people's experiences. We can see things from positive, negative or neutral viewpoints. Mental ill health is clearly an emotive, deeply personal and sensitive discussion area. A better understanding of the issues, the scientific and clinical backdrop to headline news, a closer examination of the evidence (which is often controversial), and informed debates around key issues, will help to dispel misconceptions and misunderstanding, and eliminate stigma.

1.1 Different ways of viewing mental distress

Notwithstanding the misconceptions discussed in Section 1, there are different, clinically-accepted ways of viewing mental distress. 'Physical' explanations of mental illness are centred around the notions of changes in the underlying physiological systems within the body, the neurobiology of the brain, genetic predisposition and interaction with the environment. Psychological explanations focus on behavioural and cognitive constructs, often reflecting social and environmental influences. Social explanations are based on an understanding of difference and discrimination – societal factors that separate people and may oppress them.

Activity 2 Different ways of viewing mental distress

Allow 30 minutes

Which, in your view, is more important to an understanding of mental illness - biology or psychology?Read the extracts that follow and reflect on the issues raised.

Extracts from the Telegraph and Daily Mail.

Next, read the following article and address the questions below.

Weir, K. (2012)
'The roots of mental illness – how much of mental illness can the biology of the brain explain?' *Monitor on Psychology*, vol. 43, no. 6, p. 30. American Psychological Association. *[Note: CTRL + Right Click on the link to open article in new window]*

- What are your own thoughts and views on the issues raised?
- Which do you think is more important for understanding mental illness – biological or psychological explanations?
- Can you offer further or alternative perspectives, drawing on your own previous knowledge or professional experience?

Provide your answer...

Now let's take a look at two models of explanation – the biomedical model and the biopsychosocial model – in more detail.

The biomedical model

The view that has predominated in medical practice over the last century, and still holds to varying degrees around the world, is one where mental illness is seen as a 'disorder', a 'pathology' or a 'disease' to be diagnosed, treated and ultimately 'cured'. The focus on 'disease' rather than the person as a whole requires definitions of what is considered 'normal' versus 'pathological' and judgements that are concerned with establishing boundaries, leading to a diagnosis.

This biomedical model (see Engel, 1977) suggests that disease is *by definition*, associated with identifiable disturbances in the body and can be defined in terms of such disturbance. A cure would consist of correcting the disturbance. So, by this criterion, cancer is clearly a disease, as is coronary artery disease (an artery blocked by build-up of cholesterol and other material causing narrowing of the blood vessels). If a form of mental distress has as its cause a measurable basis in a bodily disturbance then, applying this criterion, it would be considered a disease for which medicine is the obvious treatment. But how can psychological distress fit within the criteria for 'disease'? This has led to a dichotomy in views amongst mental health professionals on what *is* or *is not* considered a disease, based upon biological criteria.

Others have suggested that the biomedical model can be universally applied to all forms of distress, whether or not there is an identifiable disorder in the body. Hence, no matter what the distress, presumably a biological intervention in the form of medication (pharmacological treatment) would be appropriate.

There are limitations to the biomedical model. Usually, an individual in mental distress will present because of some form of pain, discomfort or distress which is *subjectively experienced*. Even if a disturbance within the body can be identified, it may not necessarily be the primary reason for which an individual presents for treatment (Engel, 1977). There are also cultural and social dimensions in how such expressions of distress are made and help is sought. A biological explanation alone, therefore, cannot provide the full picture.

The biopsychosocial model rejects the neat dichotomies of the biomedical model.

The biopsychosocial model

The biopsychosocial model introduced by George Engel in the late 1970s (see Engel, 1977) adopts the perspective that a full understanding of mental distress, as well as of mental health and well-being, involves a study of the biology of the body (usually with an emphasis upon the brain), an individual's psychology and their social circumstances. According to this model, disease defined *simply* in terms of biology, is not a useful way of approaching distress and well-being.

A central assumption behind the biopsychosocial model is that, not only do the three factors −biological, psychological and social − play a role in *any* form of psychological distress or well-being, but also that there is *interdependence* between them. For example, changing an individual's social circumstances can change his or her psychology. Changing an individual's psychology can change their social interactions. Changing a person's psychological state will also change the activity of their brain. A change in the underlying brain activity, for example as a consequence of traumatic brain injury or a physical illness, can change the individual's psychological state and their behaviour. In

these terms, biology is not an absolute defining criterion of when there is mental distress, but neither is it irrelevant. A biological explanation can contribute to mental distress, but should be considered as one contributory factor amongst three.

In health or ill-health, biological *and* psychological contributions will always be present. In one sense, in the very rare cases of, for example, a person living alone on a desert island or a hermit in a cave, there will not be a social factor present. However, such a person will still have had a history of earlier social interactions which will have left their mark. So, according to a biopsychosocial model, the relevant question is not which factor, 'bio', 'psycho' or 'social', is the most important, since they are interdependent. At whichever level a change arises, there will be consequences for the other two. For example, a social change, such as finding a new job, a marriage, divorce or a bereavement (the loss of a loved one), will have obvious implications for a person's psychology, which simultaneously affects the brain. But a change does not necessarily occur in only one of the three factors at any one time.

The concepts of 'holism' and 'reductionism'

A 'biopsychosocial perspective' is a form of '**holism**'. This approach examines the three *interdependent factors*, biological, psychological and social, in devising explanations and possible interventions in mental health. From this perspective, all three factors are equally valid as objects of study.

The term '**reductionism**' refers to a process of trying to explain events by focusing on only one component of a complex whole. So, in explaining behaviour, a study of biology to the exclusion of psychology and social context would be said to be reductionist. Similarly, to explain psychology simply in terms of social context, whilst ignoring biology, would also exemplify reductionism in this sense.

Another shade of meaning of reductionism is in seeking explanations at a *smaller scale*. An example of this would be searching for an explanation of mental, behavioural and social events in terms of activity of regions of the brain. To take such reductionism still further, activity of the different areas of the brain would then be explained in terms of the chemicals that make up the brain (neurochemicals), and the performance of these neurochemicals might then be explained in terms of their component parts.

The biomedical model exemplifies reductionism in both of these senses. An exclusive focus upon social context to the exclusion of biology and psychology illustrates reductionism in only the first sense of the term.

Limitations and clinical relevance of the biopsychosocial model

The biopsychosocial model is therefore an arguably more 'integrative, non-reductionist clinical and theoretical' model that 'honors the importance of all relevant domains of knowledge, not just the "biological"' (Benning, 2015). While it is considered as a more inclusive model relevant to medicine and psychiatry, and an improvement on the more reductionist biomedical model (Deacon, 2013), it is still not entirely free of criticism. Those levied against the model include (i) the dominance or under-representation of each of the three domains (bio-, psycho- or social) when applied to research and clinical practice, and (ii) the insensitivity of the model to individuals' subjective experiences and 'personal meaning', particularly within cross-cultural settings.

There are still those who perceive psychiatry as 'biased' towards biomedical paradigms (at the expense of the 'psychological' and 'social' domains), and conversely that

psychologically and socially-oriented thinking and approaches are equally ‘biased’ (at the expense of the ‘biological’ domain), making the model difficult to implement (i.e. to translate or replicate in research, or to apply within clinical practice in current healthcare systems and services). Application of the model is also reliant on the practitioner’s (i.e. clinician’s or researcher’s) own understanding and working knowledge of the three domains, affecting treatment selection, clinical judgement and decision-making (Alvarez, Pagani and Meucci, 2012). And consequently, the model does not always translate as ‘combined’ or ‘personalised treatment’ for the individual (although the combination of psychotherapy with pharmacotherapy is gaining wider recognition globally), and practitioners have found the model difficult to incorporate into treatment plans (Alvarez, Pagani and Meucci, 2012).

In terms of an ‘integrative’ model that could improve on Engel’s biopsychosocial model, key issues that remain to be tackled (Kendler, 2010, cited in Benning, 2015, p. 349) are 'how to integrate the diverse etiological factors that contribute to psychiatric illness and how to conceptualize rigorously multidimensional approaches to treatment'. Nevertheless, the ability to draw together these three aspects − bio-, psycho- and social − to critically evaluate evidence and explanations and in this manner gain a broader, more holistic picture, remains key to understanding mental health science. Understanding mental illness also requires viewing mental distress from the standpoint of those who have experienced it, as well as an appreciation of societal and cultural views, and how mental illness and mental health research are portrayed in the media.

2 Mental health research in the news

Why is it necessary to present scientific and clinical research results in a clear, accurate and concise way? How are research findings and new knowledge disseminated? Why is it important to think about the target audience? The answers to these questions may well be obvious to you, but are worth exploring further at this point.

Contemporary research is by necessity the work of ‘specialists’, and communicating research findings is a key priority that allows investigators to remain at the forefront of their respective field. Researchers typically disseminate their new findings by means of oral or poster presentations at conferences and symposia, and follow these up by publishing the results in peer-reviewed journals as a formal means of communication to peers (specialists and practitioners) working within the field. Communication in this sense is not restricted solely to peers (other specialists or a 'professional' audience within a chosen field). Researchers are also frequently called upon to communicate their findings to other specialists as well as non-specialist and ‘lay’ audiences, including the general public. Such forms of ‘knowledge transfer’ can involve use of different media − written reports, government or policy documents, blogs, podcasts, video clips, news articles, and radio or televised broadcasts − aimed at specific audiences – policy makers, funding councils, professional bodies, charitable organisations, the mass media and the general public, amongst others.

Complex issues that are tackled by research in today’s global society increasingly require a multidisciplinary approach and involve cross-disciplinary communication, with close working relationships and collaboration between researchers from different backgrounds and fields of study. Motives for engaging with research targeting issues that are widely perceived as important may vary, and need not be necessarily altruistic. Dissemination of knowledge, however, enables scientific and clinical progress to be made, allows new hypotheses to be formulated and tested, increases public awareness of developments in science and medicine, and of their benefits to society, and raises awareness of mental illness further. These activities depend on the appropriate selection of (trustworthy and reliable) information, and its timely and effective communication.

2.1 The Science Media Centre: mental health, research and the media

The UK's Science Media Centre (SMC), an independent press office that emerged from the House of Lords’ Science and Technology Select Committee in 2002 with the aim of increasing public awareness and trust in science, serves a key role working with journalists and experts within the scientific community. The SMC strives 'to provide, for the benefit of the public and policymakers, accurate and evidence-based information about science and engineering through the media, particularly on controversial and headline news stories when most confusion and misinformation occurs'. Originally based in the Royal Institution of Great Britain, the SMC is now housed in the Wellcome Collection. It operates on the core belief that scientists 'can have a huge impact on the way the media cover scientific issues, by engaging more quickly and more effectively with the stories that are influencing public debate and attitudes to science'. This function has been

demonstrated countless times over the years across the broad spectrum of science in the news.

With the increase in reporting of mental health research in the media, and the appointment of a new Head of Mental Health at the time, the SMC drafted a consultation report (see Box 1) and put forward a set of recommendations in 2010 (see Bithell, 2010 and 2013) - issues that are still largely relevant today.

Box 1 The Science Media Centre: Mental Health, Research and the Media

Key issues raised in the SMC Consultation Report (Bithell, 2010)

- Media coverage around mental health problems tends to be negative in tone, largely due to the types of media stories covered (with many focusing on crime or violent incidents).
- Mental health and neuroscience research does not generate sufficient media coverage (with coverage of mental health research in areas other than Alzheimer's disease largely under-reported).
- Publicising research offers an opportunity to present a better-informed narrative about mental health in the media.
- The strategic outlook is favourable − there is enthusiasm and excitement about the future of mental health research.
- Coverage around mental health research will help raise awareness of basic facts about mental ill health.
- Mental health research, and broader issues related to mental health can be difficult to communicate to the media, mainly due to the complexity of the area, diversity of opinion and the fact that there are few 'simple' messages.
- There can be problems with the way that psychiatry (as a field of medicine) is perceived by those outside the field; with concerns around outdated stereotypical views.
- Psychiatry and clinical psychology are disciplines that differ in their approaches and views towards mental ill health − 'many psychiatrists felt that a psychological or social approach (rather than a medical approach) tended to be given undue publicity, whereas psychologists often felt that a medical approach was the dominant view given in the media'.
- There are not enough mental health research spokespeople in the media.
- It can be difficult to respond in a timely way to breaking news stories in the area of mental health with little warning and tight deadlines; news stories often focus on controversial areas and experts quoted may not necessarily be the best qualified to comment.
- To cover mental health research, journalists also need access to case studies of people who have experience of mental health problems (i.e. service-users available for media interviews).

2.2 Coverage of mental health and research in the media

You may have noticed that some broadcasters and newspapers tend to go into greater depth in their reports, provide more accurate, balanced or measured coverage. They may attempt to present an analysis of findings or contrasting points of view, perhaps discussing the implications or limitations of the research in some way to ensure responsible reporting. Occasionally, however, headlines in the press can be more sensationalist.

It is important to recognise that the way information is presented in the media varies according to the perspective of the groups and individuals concerned, and these can come into conflict with one another. Some groups may appear to 'play down' a particular concern, while others seek to magnify it, depending on their own interests. What constitutes news may have clear political and cultural sensitivity as well as significance, and sometimes certain aspects can be given disproportionate attention.

An example of this – the first item noted in Box 1 – is the focus in the media on violent crime or incidents perpetuated by or involving individuals experiencing mental health problems. This is arguably one of the most significant contributions to the 'fear factor' and stigma surrounding mental illness within the community. Negative reporting of mental health problems, particularly stories that include elements of stereotypes (see Section 1.1 for some common misconceptions) are very powerful. They fuel deep-rooted cultural fears (social fears and anxieties) of mental illness and an unfounded notion that institutions (asylums of earlier centuries) 'protect' society as much as, if not more than, the people who are detained therein. This is clearly a distorted image − one that gives a disproportionate amount of attention to the risk of violence by people experiencing mental distress compared with other risks affecting *them*. The priority given to the risk of violence is not only highly stigmatising, but may mean that other types of risk, such as the risk of self-harm, are not addressed. This topic is discussed in more detail in the OpenLearn course *Challenging ideas in mental health*.

Three other key issues that were raised in the SMC consultation report (Bithell, 2010) and have a direct bearing on this course, are worth emphasising here.

- The first concerns the complexity of this area, the diversity of opinion, and the fact that 'there are few "simple" messages', making it difficult to communicate mental health research and broader issues related to mental health to the media.
- The second (according to the report) is that Psychiatry and Clinical Psychology differ in their approaches to and views of mental ill health, such that 'many psychiatrists felt that a psychological or social approach (rather than a medical approach) tended to be given undue publicity, whereas psychologists often felt that a medical approach was the dominant view given in the media' (Bithell, 2010).
- The third is that news stories often focus on controversial areas, 'experts' quoted may not necessarily be the best qualified to comment, and it can be difficult to respond in a timely way to breaking news stories with little warning and tight deadlines.

2.3 The importance of establishing the provenance, objectivity and timeliness of information

When it comes to accurate and timely reporting of research, responsibility not only lies with the media who select ‘newsworthy’ and often controversial pieces, but also with the researchers who are disseminating the knowledge, institutions that were involved, members of the scientific and medical communities who provided peer-evaluations, assessment and comments, any professional bodies or organisations affiliated with the work, and journal editorial boards who will have ensured the validity and credibility of the work as part of a peer-review process. The scientific and ethical rigour of the work should have stood up to scrutiny by peers deemed to have sufficient expertise in the area. A ‘failure’ at key points in this process can have significant consequences, and could ultimately erode public trust and confidence.

All the more reason, therefore, at this advanced level of study, for us to go behind the headlines and to begin to explore some of the more contemporary and controversial findings within the field, to evaluate claims and assumptions, recognise different lines of evidence and appreciate the uncertainty, ambiguity and limits of current knowledge in the study of mental health science. We will be looking at specific examples in later sections.

Reflect on your learning so far on this course.

- What were the key issues that stood out for you?
- How many of the key issues were you already familiar with?
- Can you offer further or alternative perspectives, drawing on your own personal or professional experience?

The next section will introduce you to issues related to diagnosis, as we begin to explore anxiety.

3 Exploring anxiety part 1

The OpenLearn course *Understanding depression and anxiety* provides a useful starting point to some of the issues that we will discuss over the next three sessions. Specifically, the relationship between stressful life events and emotional disorders, the main features of the physiological response to stress and the role of genetic and environmental factors, which we will briefly review here.

It is often the case that those developing anxiety or depression have experienced significant stress during childhood or adolescence as well as in their adult life, and recurring episodes are triggered by stressful life events (e.g. the loss of a loved one, unemployment, divorce, poverty and discrimination). Some personal traits considered to be 'anxiety-prone', can exacerbate the experience and increase the likelihood of developing an anxiety disorder. One of the most potent factors predicting anxiety in later life is early traumatic experiences including physical abuse as well as emotional neglect or mistreatment. Childhood abuse is a strong predictor for post-traumatic stress disorder and depression in later adult life.

There are cognitive styles (ways of thinking) that may predispose an individual to stress and to the development of anxiety or depression. People use different 'coping strategies' to manage stressful situations. An important element is the perception of 'control' over the situation – a person can feel frustrated and anxious if they feel they have no control over a situation or do not achieve the outcome they anticipate. This form of helplessness or hopelessness resembles that of subordinate or 'defeated' status in social mammals where a hierarchical social structure prevails. Challenging or re-framing the appraisal of a situation is an important strategy used by psychotherapists to help people with emotional disorders. Personality traits and temperament (so-called 'trait anxiety') are also known to be associated with mood and anxiety disorders – neuroticism predisposes to anxiety, whereas an easy-going and optimistic temperament may help a person cope more effectively with stressors. There is evidence to suggest that genetic inheritance can contribute to temperament. There is a tendency for emotional disorders to run in families, and anxiety can also frequently co-exist with other psychiatric conditions (including obsessive-compulsive disorder). The prevailing view is that a combination of (predis-posing) genetic factors can make it more likely that a person will be vulnerable to environmental factors such as stressful events and to developing emotional disorders including anxiety and depression. Alternatively, the 'transmission' of emotional disorders is also thought to pass from parent to child in some instances as a form of learned behaviour in which a child models or mimics the behaviour of the parent. You can read more on the topics of temperament, heritability, 'trait' anxiety and the role of stress in the related OpenLearn courses *Emotions and emotional disorders* and *Understanding depression and anxiety*.

It has been argued that we now live in a society where people in general are experiencing heightened levels of anxiety primarily in response to rapid technological and social change. Advances in both technology and communication − the internet, mobile technologies and social media − have given us more immediacy in our daily interactions with others and greater awareness of local, national and global events. Social pressures can dictate how we respond, putting us on the spot. We have access to 'live' information, moment by moment as events occur, and are constantly bombarded by news stories in the media that are filled with warnings, dire predictions and uncertainties about the future. It can be difficult to 'switch-off'.

As a society, we are more and more concerned with our safety and with 'risk', even though most of us are safer than ever, statistically speaking. The consequences of catastrophic events such as outbreaks of disease, nuclear accidents, war and conflict and outcomes of political upheaval and instability throughout the world are difficult to predict. So much so, that in industrialised (and typically Western) societies 'risk' and 'danger' have become synonymous and strongly associated with the possibility of negative outcomes. Risk is less often viewed in terms of balancing good with adverse outcomes. The OpenLearn course *Challenging ideas in mental health* discusses this further, exploring the meaning of risk in the context of mental health.

It is perhaps not surprising therefore that societal views as well as cultural influences have a strong impact in shaping our emotional states. Constant uncertainties over the future, and perceived risks can be viewed as a threat or danger to our safety and wellbeing and to those closest to us, keeping us at a higher state of vigilance, and further heightening our 'baseline' levels of anxiety. But what does it actually feel like to experience anxiety? Can anxiety be helpful to us in any way? How can anxiety disorders be diagnosed? We will explore these and other questions next.

3.1 The experience of anxiety

The main types of anxiety and anxiety-related disorders are summarised in Box 2. We will look at diagnosis and diagnostic criteria a little later on, but the information provided here should serve as a useful reference as you read further and engage with the activities in Sections 3.1 and 3.2.

Box 2 Anxiety and anxiety-related disorders

Panic attack

A sudden episode of intense fear and desire to escape; distressing physical symptoms (pounding heart, shortness of breath, sweating, nausea, trembling), can be accompanied by fear of dying, losing control or 'going crazy'; anxiety peaks in around ten minutes, then subsides; occurs in situations that do not involve 'real' danger; leads to overly worrying about additional attacks and temptation to avoid feared situations.

Generalised anxiety

Excessive worry (most days) about everyday events or activities; difficulty controlling worry, difficulty relaxing, sleep disturbances, difficulty concentrating, irritability, procrastination. Worry interferes with everyday life.

Social anxiety

Persistent fear of social or performance situations (e.g. dating, public speaking); intense fear of negative evaluation by others; fear of being humiliated or embarrassed; avoidance of feared situations or enduring intense distress.

Phobias

Intense, persistent and excessive fears of animals, objects or of enclosed spaces.

Agoraphobia

Fear of having a panic attack in a place where escape may be difficult or help unavailable; avoidance of anxiety-provoking situations (e.g. shopping mall, public transport, etc.).

Obsessive-compulsive disorder (OCD)

Characterised by recurring upsetting thoughts, and attempts to deal with these (e.g. compulsions such as hand-washing, arranging items in a particular order, counting) to temporarily relieve anxiety.

Post-traumatic stress disorder (PTSD)

Anxiety induced after witnessing or being subjected to or experiencing a traumatic event (recent or in the past).

Activity 3 The experience of an anxiety disorder and panic attacks

Allow 30 minutes

Watch the video below and consider the questions that follow. You might wish to view the entire recording first and then watch the video again thinking specifically about the questions the second time around, or you can review the questions as you watch the video from the start. Choose whichever approach suits you best.

Video content is not available in this format.
TED Talk: Alison Sommer − Anxiety Disorders and Panic Attacks

In this absorbing talk given in 2013 at Carleton College, a private liberal arts College in Northfield, Minnesota in the USA, Alison Sommer, a graduate of Carleton who was working as an academic technologist at Macalester College at the time, speaks candidly and poignantly about her personal experience with anxiety and panic attacks, sharing her difficult ordeal vividly with the audience on stage.

1. What form of anxiety does Alison suffer from?
2. How does her anxiety usually manifest?
3. How does Alison describe her own temperament, growing up?
4. What other mental health condition does Alison describe as having experienced, growing up?
5. Before her sporting injury (her concussion), how did she come to terms with her anxiety?

6. What, as she describes it, were the consequences of her concussion on her subsequent behaviour?
7. How does she define a panic attack (according to the Mayo Clinic's website)?
8. How is Alison's anxiety currently being managed?
9. What useful tip does Alison offer to support people experiencing a panic attack?

Discussion

1. She states that she has a form of obsessive-compulsive disorder that causes her to become anxious or frightened when something wrong or unexpected happens. She also suffers from panic attacks, and intrusive 'anxiety-provoking' thoughts.
2. Her anxiety can manifest in different physical and emotional responses, one of which is panic attacks.
3. She describes herself as being really shy and awkward as a teenager, and obsessive-minded as a child.
4. She notes 'on-and-off' issues with both anxiety and depression (prone to depression), and that she was anxious, awkward, obsessive and sometimes depressed.
5. Through meeting people with similar interests, opening up and talking to people about her feelings.
6. Her symptoms were exacerbated by the concussion. They became severe and worsened considerably (she refers to her anxiety and obsessive tendencies metaphorically as 'basically being given steroids by the concussion'). Intrusive thoughts predominated. She was angry, she was not eating or sleeping and her marriage was adversely affected. Thinking about her situation and changing her habits made things worse, giving her further anxiety, leading to panic attacks. She was diagnosed with severe OCD.
7. She defines a panic attack as 'a sudden episode of intense fear that triggers severe physical reactions when there is no real danger or apparent cause. Panic attacks can be very frightening. When a panic attack occurs, you might think you're losing control, having a heart attack, or even dying.'
8. Through a combination of medication and therapy, which is still being figured out (she describes this as a 'dance' given the difficult nature of finding the right combination that would work best). She still experiences panic attacks, but these are fewer and further in between.
9. She says the best thing someone can do is to be there and let the person experiencing the panic attack know that they are there for them, and that they will support them, a comforting presence that will help 'ride out those waves of panic'.

3.2 Key issues in understanding anxiety

The activity below will explore key issues to help you gain a broader understanding of anxiety and anxiety-related disorders.

Activity 4 Understanding anxiety – key issues

Allow 60 minutes

Listen to the podcast below and consider the questions that follow. You might wish to listen to the entire recording first and review this again thinking specifically about the questions the second time around. Alternatively, you can consider the questions as you listen to the recording the first time around. Choose whichever approach suits you best.

Audio content is not available in this format.

BBC World Service Health Check "Anxiety" Extract 1

Claudia Hammond from the BBC talks about anxiety, speaking to Claire and Scott about their experiences of anxiety and the effect it has on them, and to Nick Grey, a clinical psychologist from the Centre for Anxiety Disorders and Trauma at the Maudsley Hospital in London, in this recording broadcast in 2014.

1. How many people worldwide would meet the criteria for an anxiety disorder at any given moment?
2. How does Nick Grey define 'anxiety' in lay terms?
3. Scott Stossel, interviewed in the extract, describes a 'milder form of anxiety' and what he refers to as acute forms: acute-onset 'panic attacks' and the response to a 'phobic stimulus'. How does he describe the symptoms associated with these forms of anxiety?
4. Can anxiety and phobias be viewed as 'normal' behavioural responses; do they serve a purpose?
5. Is anxiety simply a reflection of the 'stresses and strains of modern life' and how much harder it all is living in today's world?
6. Is anxiety a 'Western' construct? Is diagnosis on the increase in the Western world?
7. Can anxiety be 'transmitted' between generations? How much is down to environment and how much to genetic factors?
8. How does Nick Grey describe social anxiety disorder?
9. Claire suffers from social anxiety disorder which she thinks was brought on by her job. How does she believe the situation arose, and has she had a similar experience in the past?
10. Is there a possible upside to having an anxiety disorder?

Discussion

1. Around one in 14 people around the world are thought be affected by an anxiety disorder at any time.
2. Nick Grey describes it as 'a kind of feeling of worry, fear, nervousness that people would have about something that has got an uncertain outcome'.
3. For him (i.e. from his perspective and subjective experience), that generalised feeling of worry at the back of his mind, worrying about negative outcomes, pessimistically anticipating the worst, is in some ways the milder form of anxiety, whereas acute-onset panic attack and phobias (he has a fear of flying) are more debilitating. He describes his experience of the symptoms of phobia (his fear of flying) to be similar to a panic attack – terrifying and uncomfortable. He describes

the symptoms as losing the ability to think straight, starting to sweat, to hyperventilate, feeling 'like you can't get enough breath', 'as though your chest is constricting' and suffering from gastric distress.

4. Nick Grey explains that anxiety is a survival mechanism that can help to keep us and those we care about safe. This is a short-lived response that helps us adapt to a situation, quite different from the disabling and chronic anxiety problems that Claire and Scott describe. Similarly, phobias serve a basis through evolution, to help us to prepare against things that could potentially cause us harm (dangerous animals, snakes, spiders, germs, etc.). While we have evolved to feel a degree of anxiety that can be considered beneficial, phobias can also develop following traumatic events and an 'anxiety response' can be associated with traumatic experiences. Scott refers to Darwin's theory that fear enhances the chances of survival of a species, and if we had not developed the 'fight or flight' response through evolution, we as a species would probably have gone extinct long ago, so some quotient of anxiety is highly adaptive (note that this is also referred to as 'state anxiety').
5. Scott explains, based on the research for his book, that going back to Greece in the 4th century BC, Rome in the 2nd century AD or the Renaissance, Victorian or Georgian eras, there are accounts of 'anxious, miserable, melancholic people' and that 'every age presumes it is the most anxious age ever', so there is some quotient of anxiety that is relatively fixed throughout the human population and is enduring (i.e. a percentage of the population will tend to be more 'anxious' than others). But there is an argument that certain eras (including the Industrial Revolution which saw rapid technological change; where the economy is uncertain; where there is rapid social transformation; and changing ideas of gender), are more 'productive' of anxiety and feelings of uncertainty.
6. This is a difficult question to answer given that there is so little evidence to go by outside of the Western hemisphere, as Nick Grey says in the extract. There is very little research outside of America, Western Europe and Australia to be able to address this question. A lot of the work has focused on community studies.
7. Scott explains that his mother had emetophobia (phobia of vomiting) and he thought he had acquired his own phobia from seeing her worries, but that his own seven-year old daughter developed the phobia, which as far as he is aware was independent of having seen him express his own worries. Although this is certainly not conclusive, he does allude to the fact that there may be a genetic influence or predisposition. Nick Grey explains that there is a genetic propensity to have an anxious temperament (this is also referred to as 'trait anxiety'), and life experiences and traumatic events add to this.
8. Nick Grey describes this as being where a person's 'worst fears are about showing signs of anxiety or saying or doing something that would be embarrassing or humiliating. And then other people thinking badly of them'.
9. Claire says she worked with very strong characters who were a lot louder and more expressive than her, and she felt under social pressure to 'compete'. It felt as though she was back at school (in classrooms), and just couldn't be herself. She was worried about speaking to certain people in the office, and showed physical symptoms of anxiety (not sleeping, developing a tremor, heart palpitations, difficulty breathing) which made her progressively more ill. The fact that this was a recurrent experience which she had first had as a child is significant.

10. Given the chronic disabling symptoms and negative experiences, you would perhaps think not. Nick Grey does point out, however, that people may develop personal growth from their experiences, overcome adversity, and develop greater levels of empathy and compassion for others who are also experiencing similar difficulties.

3.3 Understanding diagnosis – key issues

Diagnosis of mental health conditions is commonly based on one or other of two classification schemes. These are (i) the Diagnostic and Statistical Manual of Mental Disorders, currently in its 5th edition (DSM-5), published in 2013 by the American Psychiatric Association, and (ii) the World Health Organization's 'International Classification of Disease' or ICD, which has been revised at the time of writing (ICD-11, which became available on 18 June 2018). You can read about DSM and anxiety in a short paper by David Kupfer from the Department of Psychiatry at the University of Pittsburgh School of Medicine, published in 2015 (a link to the article is provided in the References section).

There continues to be considerable controversy and debate around the use of one system over the other in mental health research and clinical practice. The ICD was initiated more than one hundred years ago as a means to help classify disorders in medicine more generally, and it has been argued that this system also 'allows greater clinical discretion in making a diagnosis' for mental health conditions (Tyrer, 2014). The DSM was specifically developed for mental and behavioural disorders, and its reliability in test-retest situations has continued to improve through subsequent iterations, particularly since its third edition (DSM-III), which was published in 1980. Nevertheless, there continues to be a split between those who adhere to the DSM versus those whose preference is for ICD, and criticisms have been directed against both systems (Tyrer, 2014).

Added to the above are further complications:

- assessment, diagnosis and treatment of psychiatric (behavioural and mental health) conditions have evolved over many decades around the world mainly from research carried out in 'specialist' settings such as hospitals and clinics (institutions), as opposed to more 'natural' environments such as within the community;
- there are differences in approach to diagnosis (e.g. 'patient-centred' versus 'disease-based'); and
- symptoms may overlap between diagnostic classifications (comorbidity), or may not meet the criteria for a particular disorder, but still require treatment. Taking these issues as well as the views of patient groups and advocates into consideration, there has been a move over recent years, and particularly within the UK, towards a more integrated ('individualised' or 'tailored') approach to diagnosis and management of mental health that takes the lead from and involves the patient as a service-user (Gask et al., 2009).

Much of the controversy and ensuing debate around diagnosis has arisen due to the fact that a clinical diagnosis is not always straightforward. Psychiatric diagnoses have historically been based on presenting symptoms, and to this day psychiatric nosology remains almost exclusively based on presenting signs and symptoms and descriptive

taxonomy. Taking anxiety and depressive illness as examples, the first thing to note is the overlap in signs and symptoms between these conditions, termed ‘comorbity’. Then there remains a fundamental lack of standardised ‘biological’ parameters (‘disease’ identifiers or ‘biomarkers’) that could arguably represent a more objective measure to support clinical diagnosis. Biological and genetic markers which can be used to screen for conditions such as diabetes, cancer or metabolic diseases, to help identify and delineate a specific ‘disorder’ or a pathophysiological (i.e. ‘disease’) state, continue to remain elusive for most psychiatric conditions.

It was anticipated that psychiatric diagnoses in DSM-5 would include, in addition to signs and symptoms, brain imaging, biomarker and genetic data, and in doing so add some measure of sensitivity and specificity to diagnosis, but this has not been realised (Nemeroff et al., 2013). Diagnosis according to the DSM remains ‘phenomenologically-based’. DSM-5 does, however, have an increased focus on trauma-related and stressor-related disorders, which could lead to increased recognition and understanding of adversities, in particular those that may be experienced during childhood and adolescence. Indeed, one of the biggest shake-ups from the previous edition has been to the classification of anxiety and related disorders. The DSM-5 chapter on anxiety disorder no longer includes obsessive-compulsive disorder, post-traumatic stress disorder, or acute stress disorder.

PTSD and OCD in DSM-5

Post-traumatic stress disorder (PTSD) and acute stress disorder have been moved from ‘Anxiety Disorders’ to an independent category of ‘Trauma and Stressor-Related Disorders’ or TSRD. PTSD has been traditionally conceptualised as a ‘fear disorder’ defined by three clusters of symptoms: (i) re-experiencing of fear (intrusive memories), (ii) avoidance of the reminders of trauma (amnesia, withdrawal, avoidance of situational reminders), and (iii) hyperarousal (disturbances in sleep, heightened startle response) (Nemeroff et al., 2013). DSM-5 has moved beyond the fear-based anxiety construct, and PTSD criteria have been revised to include negative emotional states and symptoms of distress – dysphoria, aggression, guilt and shame − on account that those with PTSD (e.g. war veterans and victims of crime or of abuse) often present for clinical assistance with such negative emotional states. A new PTSD subtype introduced for children aged 6 and under is considered to take into account the variation of symptom presentation in young children.

DSM-5 also lists obsessive-compulsive disorder and related disorders (OCRDs) as a separate category (along with new conditions such as hoarding disorder and excoriation or ‘skin-picking’ disorder). The decision was based on a review of evidence suggesting that OCD differs from anxiety disorders on a number of diagnostic validators and psychobiological and phenomenological overlap between OCD and some related conditions. The ‘close relationship’ with anxiety disorders is still reflected by the sequential order of corresponding chapters in DSM-5 (Nemeroff et al., 2013).

An emphasis − the potential advantage for clinical practice − of segregating PTSD and OCRDs from anxiety-related disorders, was to raise awareness amongst clinicians and the public, of these 'underdiagnosed and undertreated conditions', encouraging 'researchers to use structured diagnostic interviews and standardised symptom measures to investigate and evaluate the full range of these conditions in a systematic way' (Nemeroff et al., 2013).

Critics of the DSM continue to debate the definition and classification of ‘psychiatric disorders’ stressing that is important to avoid medicalising problems of daily living (Stein

et al., 2010; Aftab, 2014). While acknowledging this view, proponents of the DSM stress that 'those who meet diagnostic criteria for these conditions experience distress or impairment and deserve appropriate intervention' (Nemeroff et al., 2013).

Criteria that define a ‘mental disorder’

At what point does a ‘problem of daily living’, or a ‘characteristic human trait’ (which may lie along the spectrum or continuum of human behaviour) become a ‘diagnosable disorder’ or a ‘disease’? When it interferes with an individual’s quality of life and causes them distress? But can conditions that are referred to as ‘mental illnesses’ be truly considered to represent ‘diseases’ or ‘disorders’ in a physical sense with an underlying pathology that would qualify their classification as such? Or are they in fact personal, social and ethical problems associated with everyday living within societal and cultural contexts? Are they psychosocial constructs that reflect the complexity of human interactions, politics, poverty, unemployment, traumatic experiences, internal and external conflict, and the need to conform with societal ‘norms’ and socially acceptable behaviours?

Thomas Szasz, a psychiatrist and life-long critic of diagnostic classification systems wrote in his 1960 article on ‘The Myth of Mental Illness’:

> The assumption is made that some neurological defect, perhaps a very subtle one, will ultimately be found for all the disorders of thinking and behavior… for those who regard mental symptoms as signs of brain disease, the concept of mental illness is unnecessary and misleading. For what they mean is that people so labeled suffer from diseases of the brain…
>
> (Szasz, 1960)

Fifty years on (in 2011), he wrote:

> In due time, with refinements in medical technology, psychiatrists will be able to show that all mental illnesses are bodily diseases… This contingency does not falsify my contention that mental illness is a metaphor. It verifies it… Such a process of biological discovery has in fact, characterised some of the history of medicine, one form of ‘madness’ after another being identified as the manifestation of one or another somatic disease, such as beriberi or neurosyphilis. The result of such discoveries is that the illness ceases to be a form of psychopathology and is classified and treated as a form of neuropathology. If all the conditions now called mental illnesses proved to be brain diseases, there would be no need for the notion of mental illness and the term would become devoid of meaning.
>
> (Szasz, 2011)

Box 3 DSM-5 Criteria that define a condition as a mental disorder

(American Psychiatric Association, 2013)

A mental disorder is a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning.

Mental disorders are usually associated with significant distress or disability in social, occupational, or other important activities. An expectable or culturally approved response to a common stressor or loss, such as death of a loved one is not a mental disorder.

Socially deviant behavior (e.g. as political, religious or sexual) and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction within the individual, as described above.

The diagnosis of a mental disorder should have clinical utility. That is, it should:

- help to determine prognosis[a]
- help in the development of treatment plans
- help to give an indication of potential treatment outcomes

A diagnosis of a mental disorder is not equivalent to a need for treatment[a]

Need for treatment is a complex clinical decision that takes into consideration:

- symptom severity
- symptom salience (presence of relevant symptom; e.g. presence of suicidal ideation)
- distress (mental pain) associated with the symptom(s)
- disability related to the individual's symptoms; risks and benefits of available treatment
- other factors such as mental symptoms complicating other illness

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Note [a] DSM-5 clarifies that the diagnosis of a mental disorder does not by itself indicate a need for treatment as outlined above.

For Sasz, the notion of mental illness and brain disease appear to be mutually exclusive. Others have argued that the concept of 'disease' can be understood in terms of suffering, functional impairment and incapacity, and 'mental disorder' conceptualised as transcending the mind-body dualism (Aftab, 2014). It is certainly not as clear-cut as this. Examples from medicine reinforce the point that the health of the body and of the mind are inextricably linked (Renoir et al., 2013), but with the emergence of biological psychiatry and modern advances in brain and behavioural sciences, most mental illnesses are increasingly presumed to have a neurobiological basis, even if that basis is, as yet, poorly understood. This does not address the issue that there is still no satisfactory definition for either 'disease' or 'mental disorder' which is universally accepted, and the term 'mental disorder' is misleading as it implies a distinction between a mental and a physical disorder. DSM-5 has attempted to define the criteria that should be met for a condition to be termed a 'mental disorder' (see Box 3).

The 'global burden'

The ICD and DSM classifications have continued to consider mental illnesses as 'disorders'. Indeed, the World Health Organization's 'Global Burden of Disease Study 2010' (the findings from which were released in 2012), indicated that a substantial proportion of the world's 'disease' burden came from mental, neurological and substance use disorders: 10.4% of global disability-adjusted life years (DALYS), 2.3% of global years

lost to premature mortality (YLLs) and 28.5% of global years lived with disability (YLDs). Mental disorders accounted for the largest proportion of DALYs (Whiteford et al., 2015). Anxiety and depressive disorders made a significantly disproportionate contribution to the overall burden of 'disease' – the figures were striking, as detailed below. (See also Section 4.4 and Box 9.)

In their analysis published in 2015, Whiteford and colleagues estimated that anxiety disorders (mild, moderate and severe states) accounted for more than 272 million cases (derived from estimates of point prevalence, i.e. the number of new and pre-existing cases at a specified point in time), close behind major depressive disorder (at 298 million). These figures were far greater than for other mental, neurological and substance use estimates (alcohol dependence being next in the order at ~95 million) with the exception of tension-type headaches and migraine, which topped the billion mark for prevalence estimates (Table 1 in Whiteford et al., 2015). After standardising for age, major depressive disorder and anxiety disorders had the highest DALYs with rates for women consistently higher than for men (Table 2 in Whiteford et al., 2015). Aggregating the DALYs across all countries, gender and age groups for the 2010 data (Table 3 in Whiteford et al., 2015) identified major depressive disorder as representing 2.5% (63.2 million DALYs) and anxiety disorders 1.1% (26.8 million DALYs) *of all cases* of the global burden of disease, and 24.5% and 10.4% respectively of the burden of DALYs attributable *solely to* 'mental, neurological and substance use' – the greatest proportions by far in either category amongst the conditions listed.

Whiteford and colleagues (2015) noted that 'although these disorders exist in all countries, cultures also influence their development and presentation' and that 'the predominantly Western-based definitions of mental, neurological and substance-use disorders can be in conflict with cultural contexts, leading to challenges in assembling data on global epidemiology' (Whiteford et al., 2015). Clearly then, the cultural context in which a diagnosis is made is an important factor for epidemiological studies based on diagnostic classifications. Fortunately, this is acknowledged in DSM-5. Box 4 lists some of the significant changes from the previous edition of the DSM that are relevant to anxiety.

Box 4 Major changes from DSM-IV-TR to DSM-5 focusing on anxiety disorders

(American Psychiatric Association, 2013)

1. 'Culture' is discussed more explicitly to bring greater attention to cultural variations in symptom presentations.
2. DSM-5 has moved to a nonaxial documentation of diagnosis (formerly Axes I, II, and III), with separate notations for important psychosocial and contextual factors (formerly Axis IV) and disability (formerly Axis V). This approach is consistent with WHO and ICD guidance to consider the individual's functional status separately from their diagnoses/symptom status.
3. 'Social Phobia' is now termed 'Social Anxiety Disorder'.
4. 'Panic Disorder' and 'Agoraphobia' have been unlinked and each now has its own separate criteria (on the basis that many patients experience agoraphobia without panic symptoms).
5. 'Separation anxiety disorder' and 'selective mutism' are now classified as anxiety disorders (instead of Disorders of Infancy, Childhood or Adolescence, which has been eliminated).

6. Age criteria for Separation Anxiety Disorder have been changed to allow onset after age 18, with a duration criterion added of ‘typically lasting 6 months or more’.
7. For Agoraphobia, Specific Phobia, and Social Anxiety Disorder, the 6 month duration criterion has been extended to all ages (formerly just individuals under age 18) to minimise overdiagnosis of transient fears. The anxiety must be out of proportion to the actual danger or threat, but the requirement that individuals over age 18 years recognise their anxiety as excessive or unreasonable has been eliminated.
8. Panic attack descriptors have changed to identify 'unexpected and expected' panic attacks. Panic attacks function as a prognostic factor for severity of diagnosis, course, and comorbidity across many anxiety and other disorders, and thus can be listed as a specifier that is applicable to all DSM-5 disorders.

The Research Domain Criteria

Further complexities are inherent in the application of existing diagnostic classification systems and their use for different purposes (i.e. research-focused versus clinical practice-based). Given such difficulties, the US National Institute of Mental Health (NIMH) initiated the Research Domain Criteria (RDoC) Project in 2009, in an attempt to align more closely ‘the dimensions of observable behaviour with neurobiological measures’, as a new way of classifying mental disorders (NIMH, 2017; Cuthbert, 2015; McKay and Tolin, 2016). The aim was to 'forge new approaches that can translate advances in brain and behavioral science to assessment and treatment' (Cuthbert, 2015). This experimental framework was developed mainly for research purposes, not as a clinical tool, but has gained considerable wider interest for its potential use in future psychiatric nosologies, aspiring to add further ‘precision’ to psychiatric diagnoses, guiding treatment decisions and expected outcomes or course of illness, tailored to an individual.

Rather than starting with clinically-derived definitions of mental disorders based on presenting signs and symptoms and seeking biological or psychological correlates, RDoC adopts the rather radical approach of first creating a compendium of basic behavioural and cognitive functions and related brain circuits, and considering ‘disorders’ in terms of dysregulation or dysfunction in these foundational systems, informed by initiatives such as the Human Connectome Project and the US BRAIN programme (Cuthbert, 2015). You can read the definitions of the six RDoC domains and associated constructs on the NIMH website (the sensorimotor domain was added in 2019).

RDoC attempts to change the way that mental disorders are conceptualised and studied by (i) acknowledging 'that mental illnesses are increasingly understood to be disorders of neurodevelopment’ and that ‘the study of normal development provides a basis for understanding aberrant trajectories at different points along developmental pathways'; (ii) that 'environmental events exert profound influences, not only in neurodevelopment, but throughout the lifecourse'; and (iii) that constructs are 'dimensional and can be defined in terms of the degree of departure from the normal range', providing the capability of 'more readily establishing cut-off points to define (for example) mild, moderate or severe levels of disorder' achieving ‘quantitative’ dimensional measures.

But the broader problems of heterogeneity, individual differences, subtypes, symptom clusters and their overlap remain challenging issues, even with the move away from a categorical to a more dimensional (spectrum-based) understanding supported by the new RDoC approach.

Thomas Insel, the former NIMH Director involved in the launch of RDoC, wrote in 2013:

> The strength of each of the editions of DSM has been 'reliability' – each edition has ensured that clinicians use the same terms in the same ways. The weakness is its lack of validity. Unlike our definitions of ischemic heart disease, lymphoma, or AIDS, the DSM diagnoses are based on a consensus about clusters of clinical symptoms, not any objective laboratory measure. In the rest of medicine, this would be equivalent to creating diagnostic systems based on the nature of chest pain or the quality of fever. Indeed, symptom-based diagnosis, once common in other areas of medicine, has been largely replaced in the past half century as we have understood that symptoms alone rarely indicate the best choice of treatment… NIMH has launched the Research Domain Criteria (RDoC) project to transform diagnosis by incorporating genetics, imaging, cognitive science, and other levels of information to lay the foundation for a new classification system.
>
> (Insel, 2013)

He went on to say:

> It became immediately clear that we cannot design a system based on biomarkers or cognitive performance because we lack the data. In this sense, RDoC is a framework for collecting the data needed for a new nosology. But it is critical to realize that we cannot succeed if we use DSM categories as the 'gold standard'. The diagnostic system has to be based on the emerging research data, not on the current symptom-based categories. Imagine deciding that EKGs were not useful because many patients with chest pain did not have EKG changes. That is what we have been doing for decades when we reject a biomarker because it does not detect a DSM category. We need to begin collecting the genetic, imaging, physiologic, and cognitive data to see how all the data – not just the symptoms – cluster and how these clusters relate to treatment response.
>
> (Insel, 2013)

3.4 Reflection

The issues raised previously − the discussion around diagnosis − provide the relevant backdrop for you to explore aetiology and treatments, mindful of the context in which research in these areas will be presented. We will critically examine aspects associated with the aetiology of anxiety in the next section focusing specifically on (i) gender, and (ii) work-related stress as risk factors.

Reflect on your learning in this section.

- What were the key issues or concepts that stood out for you?
- How much of the material covered in this section were you already familiar with?
- Can you offer further or alternative perspectives, drawing on your own personal or professional experience?

4 Exploring anxiety part 2

We know that anxiety can be a normal ‘adaptive’ (behavioural and physiological) response to stress. The acute 'fight or flight' response can energise, motivate and increase our focus and attention in the short term. It can operate as a ‘call to action’, a self-preservation or survival mechanism that alerts us to steer away from or to face and deal with and resolve a stressful situation, a perceived danger or a threat. This is quite different from chronic (persistent or intense) anxiety which can be related to a specific cause such as a phobia, or anxiety that endures but may be unexplained − an irrational fear or worry. Chronic and persistent anxiety interferes with everyday life (both in terms of the frequency and severity of symptoms), causes worry and distress and meets diagnostic thresholds (DSM or ICD classifications). When anxiety becomes ‘maladaptive’ in this way, it has negative consequences on health, becomes debilitating and warrants intervention.

4.1 Symptoms, behaviours and negative thoughts

A change in behaviour can often be the presenting symptom of anxiety − a response to physiological or psychological stressors. Common symptoms and general behaviours associated with anxiety disorders are listed in Box 5. Cognitive distortions (negative modes of thinking) that can contribute towards and exacerbate anxiety are summarised in Box 6.

Box 5 Common symptoms and general behaviours associated with anxiety disorders

Common symptoms

- **Physical:** trembling, muscle tension, shortness of breath, accelerated heart rate, heart palpitations, sweating, dizziness, dry mouth, loss of appetite, nausea, headaches, insomnia.
- **Behavioural and cognitive:** avoidance, disturbed sleep, procrastination, turning to alcohol, increased caffeine or nicotine use, distractibility, restlessness, irritability, hypervigilance, repetitive thoughts, negative self-talk, disorientation, thoughts of dying or ‘going insane’ or ‘out of control’, persistent worries, difficulty concentrating, experiencing frightening or intrusive thoughts or images.

General behaviours and associated outcomes

Feeling overwhelmed; fear of failure; perfectionism; missed or unmet deadlines; low performance; lost relationships; difficulty relaxing; overwhelming spells of panic; avoiding places or situations from which a quick exit is not possible; feeling as though something catastrophic will happen; further concern or distress about own anxiety (negative circle); significant changes in behaviour as a result of anxiety; avoiding social interaction or situations; feeling judged; feeling embarrassed; experiencing intrusive thoughts or repetitive behaviours; can lead to substance use e.g. alcohol or ‘hard drugs’ such as cocaine, ecstasy, marijuana to cope with anxiety; increased caffeine or nicotine use can further heighten state of ‘arousal’ and hypervigilance.

Box 6 Anxious thinking − cognitive distortions that can contribute to increased anxiety

based on Beck (1964, 1976) and Burns (1980)

- **All or nothing:** seeing things in black and white or right and wrong terms.
- **Disqualifying positives:** rejecting positive experiences because they 'don't count'.
- **Jumping to conclusions:** drawing negative conclusions even though there is insufficient evidence.
- **Mind reading:** arbitrarily deciding you know what negative conclusions others have made about you.
- **Catastrophising:** assuming extreme and horrible consequences of events.
- **Shoulds and shouldn'ts:** telling yourself what you 'should' and 'should not' do.
- **Mental filtering:** focusing on a single negative detail and dwelling on it.

4.2 Diagnostic criteria for generalised anxiety disorder and panic disorder

In Section 3 we began to explore some of the complexities associated with the diagnosis of mood disorders, noting in particular the lack of definitive biological, genetic or brain imaging markers (biomarkers) that could be used to support diagnosis at the present time. Anxiety can co-exist with other psychiatric conditions, most notably depression. It can also manifest as a consequence of a somatic complaint (physical illness such as cancer, diabetes, cardiovascular disease or chronic pain), and may present differently in children and adolescents compared with adults, adding further complication to diagnosis. Generalised anxiety disorder (GAD) and panic disorder (PD) are amongst the most prevalent of anxiety disorders in the world today. You can read further about the diagnosis and management of GAD and PD in the article by Locke et al. (2015). Written from a US perspective aimed at family physicians (i.e. GPs) and those in continuing medical education, Locke and colleagues consider important aspects of diagnosis and management of GAD and PD in adults using the DSM-5 diagnostic criteria (discussed in Section 3.3) which are of wider, global relevance. The link to the article is provided in the References section should you wish to read further on this topic, beyond this course. The DSM-5 criteria for GAD and PD are presented in Boxes 7 and 8 (APA, 2013), for information.

Box 7 DSM-5 diagnostic criteria for generalised anxiety disorder

adapted from Locke et al. (2015) based on APA (2013, p.222)

A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance).

B. The individual finds it difficult to control the worry.

C. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms having been present for more days than not for the past 6 months):

   Note: Only one item is required in children.

   A. Restlessness or feeling keyed up or on edge.
   B. Being easily fatigued.
   C. Difficulty concentrating or mind going blank.
   D. Irritability.
   E. Muscle tension.
   F. Sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep).

D. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

E. The disturbance is not attributable to the physiological effects of a substance (e.g. a drug of abuse, a medication) or another medical condition (e.g. hyperthyroidism).

F. The disturbance is not better explained by another mental disorder (e.g. anxiety or worry about having panic attacks in panic disorder, negative evaluation in social anxiety disorder [social phobia], contamination or other obsessions in obsessive-compulsive disorder, separation from attachment figures in separation anxiety disorder, reminders of traumatic events in post-traumatic stress disorder, gaining weight in anorexia nervosa, physical complaints in somatic symptom disorder, perceived appearance flaws in body dysmorphic disorder, having a serious illness in illness anxiety disorder, or the content of delusional beliefs in schizophrenia or delusional disorder).

Box 8 DSM-5 diagnostic criteria for panic disorder

adapted from Locke et al. (2015) based on APA (2013, p.208-9)

A. Recurrent unexpected panic attacks. A panic attack is an abrupt surge of intense fear or intense discomfort that reaches a peak within minutes, and during which time four (or more) of the following symptoms occur:

   Note: The abrupt surge can occur from a calm state or an anxious state.

   A. Palpitations, pounding heart, or accelerated heart rate.
   B. Sweating.
   C. Trembling or shaking.
   D. Sensations of shortness of breath or smothering.
   E. Feelings of choking.
   F. Chest pain or discomfort.
   G. Nausea or abdominal distress.
   H. Feeling dizzy, unsteady, light-headed, or faint.
   I. Chills or heat sensations.
   J. Paresthesias (numbness or tingling sensations).

K. Derealization (feelings of unreality) or depersonalization (being detached from oneself).

L. Fear of losing control or 'going crazy'.

M. Fear of dying.

Note: Culture-specific symptoms (e.g. tinnitus, neck soreness, headache, uncontrollable screaming or crying) may be seen. Such symptoms should not count as one of the four required symptoms.

B. At least one of the attacks has been followed by 1 month (or more) of one or both of the following:

N. Persistent concern or worry about additional panic attacks or their consequences (e.g. losing control, having a heart attack, 'going crazy').

O. A significant maladaptive change in behaviour related to the attacks (e.g. behaviours designed to avoid having panic attacks, such as avoidance of exercise or unfamiliar situations).

C. The disturbance is not attributable to the physiological effects of a substance (e.g. a drug of abuse, a medication) or another medical condition (e.g. hyperthyroidism, cardiopulmonary disorders).

D. The disturbance is not better explained by another mental disorder (e.g. the panic attacks do not occur only in response to feared social situations, as in social anxiety disorder; in response to circumscribed phobic objects or situations, as in specific phobia; in response to obsessions, as in obsessive-compulsive disorder; in response to reminders of traumatic events, as in post-traumatic stress disorder; or in response to separation from attachment figures, as in separation anxiety disorder).

4.3 Aetiology of anxiety disorders and the basic neural circuitry involved in anxiety

The causes of anxiety disorders are complex and multifactorial and can include (among others) psychological trauma, psychosocial stressors and conflict, as well as physical illness. Current models for GAD point to an underlying dysregulation in the physiological and behavioural responses to stress (which involves the hypothalamic-pituitary-adrenal axis), and activation of brain networks responsible for threat detection, introspective thinking as well as learning and memory (e.g. conditioned and social learning and social referencing). Twin studies suggest that environmental (e.g. psychosocial) and genetic factors are likely involved.

A key brain structure involved in the neural circuitry of anxiety is the amygdala, located within the temporal lobes and forming part of the limbic system regulating mood and emotional responses. Parts of the amygdala are involved in triggering the responses we associate with fear (e.g. submission, fleeing, or ‘freezing’ on the spot). Other regions within the amygdala elicit feelings of bliss or peacefulness, or evoke aggression and attack. Life-or-death situations are processed within fractions of a second. To do this, sensory information from the external environment must first reach the amygdala. This is achieved in two ways – a direct route to the amygdala via the thalamus (taking about 1/50 of a second), and an indirect route to the amygdala via the cerebral cortex, which takes

slightly longer (about a fifth of a second) but allows information about the stimulus (its nature, location, threat level, etc.) to be consciously processed and an assessment to take place. Interaction between the amygdala, prefrontal cortex and hippocampus modulates the response (e.g. through assignment of emotional salience, monitoring and detection, and an awareness of the context in which a stimulus is received and any memory or recall of its previous experience or encounter). The main outputs of the amygdala are the hypothalamus, basal forebrain and brainstem, pathways that elicit the physiological, cognitive and emotional responses associated with fear and anxiety.

In the remainder of this section we explore two key issues − gender and work-related stress − as risk factors for anxiety disorders. We specifically ask whether women are more likely to suffer from anxiety than men, and consider whether work is good or bad for your mental health.

4.4 Are women more likely to suffer from anxiety disorders than men?

Before we proceed further, it is important first to establish the concepts of prevalence, incidence and lifetime prevalence, which are frequently used when figures are quoted for mental health conditions – see Box 9. DALYs and YLDs, which you were introduced to in Section 3, are also defined here for reference.

Box 9 Understanding the figures frequently quoted for mental health conditions

- **Prevalence** – the number of people with a particular diagnosis within the population at any given time.
- **Lifetime prevalence** – the number of people who have experienced a particular mental health problem at any time in their lives.
- **Point prevalence** − the number of new and pre-existing cases at a specified point in time (i.e. the number of people living with a condition within a specified time period, e.g. one year, divided by the number of individuals within the population).
- **Incidence** – the number of new cases of a particular mental health condition that appear in a specified time period.
- **DALYs** – disability-adjusted life years or the sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability.
- **YLDs** – years lived with disability.

Comparing the number of new cases (incidence) with the number who are ill at any given time (prevalence) can provide a rough indication of the average amount of time a mental health condition is likely to last. Often the number of people treated by health professionals is used to determine how common a mental health problem is, but this is likely to be an underestimate as it does not take into account those who may not have come into contact with services. Psychiatric diagnoses are also not always straightforward as we have seen, and a person's diagnosis can change during the course of their life, and impact on the treatment that they receive.

Examining the figures from the WHO 'Global Burden of Disease 2010' Study

If we look again at the data from the WHO Global Burden of Disease 2010 study ('The global burden'; Whiteford et al., 2015), we can see that anxiety and depressive disorders not only made a significantly disproportionate contribution to the overall burden of disease, but also ranked highest amongst the 'neurological, substance use and mental disorders' categories (Whiteford et al., 2015). The prevalence of anxiety and major depressive disorders was also highest in regions with a history of conflict or war (including in North Africa and the Middle East) according to the study (Whiteford et al., 2015). The 'top 10' DALYs attributable to mental, neurological and substance use disorders are presented in Table 1.

Table 1 DALYs (absolute numbers and proportions) attributable to mental, neurological and substance use disorders in 2010 (adapted from Whiteford et al., 2015)

Disorder	Absolute DALYs (to nearest 100,000)	Proportion of All Cause DALYS %	Proportion of Mental, Neurological and Substance Use DALYS %
Major depressive disorder	63,200,000	2.5	24.5
Anxiety disorders	26,800,000	1.1	10.4
Migraine	22,400,000	0.9	8.7
Alcohol dependence	17,700,000	0.7	6.9
Epilepsy	17,400,000	0.7	6.8
Schizophrenia	13,600,000	0.5	5.3
Bipolar disorder	12,900,000	0.5	5.0
Alzheimer's disease and other dementias	11,400,000	0.5	4.4
Dysthymia	11,100,000	0.4	4.3
Opioid dependence	9,200,000	0.4	3.6

NOTE: DALYS have been aggregated across all countries, gender and age groups.

- Looking at the data presented in Table 1, what proportion of (i) the total global burden of DALYs and (ii) the burden of mental, neurological and substance use disorders, was attributable to anxiety disorders in 2010?
- Anxiety disorders made up 1.1% of all causes of DALYs and 10.4% of the DALYs attributable to mental, neurological and substance use in the 2010 Global Burden of Disease Study, according to the data presented by Whiteford and colleagues (2015).

DALYs attributable to the 'top 10 burdens' for mental, neurological and substance use disorders (identified in Table 1) are shown in Table 2, segregated by gender, and standardised for age, comparing figures for 1990 with 2010 (spanning two decades).

Table 2 Age-standardised DALYs (per 100,000) attributable to mental, neurological and substance use disorders, 1990 and 2010 (adapted from Whiteford et al., 2015)

Disorder	1990 Male	2010 Male	1990 Female	2010 Female
Major depressive disorder	694.8	689.9	1171.7	1161.2
Anxiety disorders	274.3	273.0	508.9	510.3
Migraine	233.1	236.6	405.9	415.8
Alcohol use disorders	431.0	409.9	117.2	106.0
Epilepsy	261.6	269.3	226.0	232.9
Schizophrenia	230.7	223.0	187.8	180.6
Bipolar disorder	172.0	172.1	204.6	204.8
Alzheimer's disease and other dementias	125.7	155.5	153.7	178.6
Dysthymia	135.3	135.8	189.7	190.0
Opioid use disorders	139.0	184.4	63.8	78.4

- Looking at the data presented in Table 2, by what percentage did the DALYs for anxiety disorders change between 1990 and 2010 for (i) males, and (ii) females. What can you conclude from this?
- There was a very slight reduction in the DALYs for anxiety disorders for males (of 0.5%), and an equally small percentage increase for females (of 0.3%) between 1990 and 2010. Looking at the figures presented overall, DALYs for anxiety disorders appear to have remained relatively stable over time (i.e. over two decades), although it is not known whether any significant fluctuations occurred during this period.

- Take another look at Table 2. This time consider any differences between DALYs for males and females between 1990 and 2010. What can you conclude?
- The figure for DALYs attributed to anxiety disorders in females was 1.9 times higher than for males in 1990 *and* in 2010. The rate of DALYs has remained stable over the two decades, and the female to male ratio of DALYs has remained the same.

Going behind the headline news

Activity 5 Are women more likely to suffer from an anxiety disorder than men?

Allow 40 minutes

Background and context

On June 6 2016, BBC News and the tabloid and broadsheet press (Daily Mirror, Mail Online, The Guardian and The Independent) all picked up on the findings of a systematic review, by Remes et al. (2016), which looked at the prevalence of anxiety

disorders in adult populations. Although the research identified a number of vulnerable groups, all of the news items led with the headline that women are more likely to have an anxiety disorder than men. Some of the claims that were being made in the news reports, however, did not seem to be warranted (i.e. they were not based on available evidence). Links to several of the news articles are provided below, for information.

- **BBC News** Women 'nearly twice as likely to have anxiety' as men
- **The Guardian**
  Women twice as likely as men to experience anxiety, research finds
- **The Independent** Women twice as likely to worry than men
- **Daily Mirror** Women are almost TWICE as likely to suffer from anxiety as men
- **Mail Online**
  Modern life is leaving women twice as likely to be stressed as men as they juggle work, family and children

The task

NHS Choices, working with Bazian (independent consultants who provide evidence-based support for clinical commissioning), have produced a brief analysis of the study going 'behind the headlines'. Their analysis is based on the source article by Remes et al. (2016). Read the analysis and answer the following questions. Note: you can access the analysis via the link provided below. You will not need to consult the original article in order to answer the questions below, but you can refer to it if you wish. The article is available as an open access publication (the link is provided in the References section at the end of this course).

Read the analysis below and answer the questions that follow:

NHS Choices and Bazian (2016)
Women are more likely to suffer from anxiety than men

1. Where was the study carried out and who funded it?
2. What were the main findings of the study?
3. What type of research was this?
4. What did the research involve? How was it carried out?
5. What were the results of the study? What did the researchers find?
6. What conclusion did the authors reach?
7. What are the main strengths and limitations of the study?
8. What is the take-home message from the study?
9. In reporting this news, the Mail Online claimed that 'modern life is leaving women twice as likely to be stressed as men as they juggle work, family and children'. Is this supported by evidence presented in the study?

Discussion

1. It was carried out by researchers based at the University of Cambridge and Westminster City Council, and funded by the UK National Institute for Health Research.
2. The study found that women, people under the age of 35, and those living with chronic physical conditions were disproportionately affected by anxiety disorders. Women were found to be almost twice as likely to be affected as men across different countries. However, the lack of representation from developing and

under-developed parts of the world and the need for further study of the prevalence of anxiety in these parts of the world were pointed out by the researchers.

3. It was a systematic review (a synthesis of medical research evaluating relevant previously published studies, based on minimum 'quality' criteria for inclusion). The research aimed to collate evidence from previous studies looking at the prevalence of anxiety and global burden across subgroups within the population. Studies that were included varied widely in their methods and populations examined. Due to this variation, the researchers did not carry out a meta-analysis (a method that would have combined the results of individual studies), which would have provided a more robust analysis. They reported findings across individual studies instead.
4. Three literature databases, up to May 2015, were searched to identify previous systematic reviews and meta-analyses that had reported the burden of anxiety across the globe. The search covered all anxiety disorders including generalised anxiety disorder, social anxiety and obsessive-compulsive disorder, and methods used to assess anxiety. The researchers focused their search to look for reviews that included individuals suffering from other medical or mental health conditions (chronic or infectious disease, psychiatric conditions and addiction) as well as those from vulnerable populations. Reviews on the treatment of anxiety were excluded. Two researchers assessed the quality of the reviews and eligibility for inclusion, and extracted data. 48 studies were gathered to describe the global distribution of anxiety disorders. Selected reviews included studies of people of all ages, from young children to people of old age, with the overall number of studies and individual study sample sizes varying. Methods of assessment of anxiety varied between studies, from structured and unstructured interviews to self-reported questionnaires.
5. The prevalence of anxiety disorders within the population ranged from 3-25%. Women were found to be twice as likely to be affected as men (female:male ratio of 1.9 to 1). This was consistently the case across different countries and co-existing health conditions. Young adults under the age of 35 were also more often affected (2.5-9.1%). North America, North Africa and the Middle East were found to have the highest prevalence (7.7%, 6.8% and 7.7.% respectively), and East Asia had the lowest prevalence (2.8%) of anxiety disorders. The researchers found that prevalence was specifically higher in individuals who had chronic physical conditions such as cardiovascular disease, cancer, diabetes and respiratory diseases (1.4-70%).
6. They stated that important areas of research remained under-investigated or unexplored and although further studies on the prevalence of anxiety disorders were needed, the findings could serve to guide the research agenda and help develop timely interventions.
7. The study provides a general picture of the prevalence of anxiety disorders worldwide, but does not specify differences between types of anxiety disorder. Anxiety disorders were found to be common across all population groups, but women and young people seemed to be disproportionally affected. Although prevalence was higher in individuals with chronic conditions, there was no indication whether anxiety disorders were considered to be a contributing factor or a consequence of these conditions. The researchers highlighted the large variability in the methods of the reviews and the studies they included, which

makes the comparison of prevalence figures between the studies difficult. There was wide variation between reviews in (i) number of studies they included and their sample sizes, (ii) the ages of participants, with some reviews focusing on adults and others on children, (iii) the population samples (general population samples or those with specific physical or mental health conditions), (iv) the assessment of anxiety, and (v) having accounted for confounding factors (i.e. whether the studies took account of other health, environmental or lifestyle factors that may have impacted on the outcomes being measured).

8. The review serves as a useful indicator of the prevalence of anxiety disorders, but cannot be taken to suggest causation. The higher prevalence in women or younger adults could be due to a complex interaction of biological, psychosocial and lifestyle factors. However, the direction of the effect or the extent of influence of different factors remains unknown. The researchers call for further studies to be carried out on the course of the illness, and note the need for research in developing and under-developed parts of the world, and for specific study into vulnerable subgroups of society.
9. No. The claim is based on opinion rather than evidence presented in the study. The Mail Online's claim that the reason why younger women had higher levels of anxiety was down to being working mothers is not warranted (i.e. not supported by evidence) from the study.

4.5 Is work good or bad for your mental health?

It has been argued that beyond simple economic rewards and material benefits, work helps to develop us as individuals, building our skills and improving mental well-being (status, confidence, self-esteem in doing a job well). Although employment can be stressful, difficult and exhausting at times, it can also be a source of satisfaction for many people. While being at work during periods of mental ill health can be understandably difficult, barriers in the workplace and the wider community can mean that people with mental health problems have less access to work opportunities when they are no longer experiencing ill health. Return to gainful employment is an important aspect of recovery from ill health for many people. You can read further on this topic in the OpenLearn course on *Work and mental health*.

Activity 6 Reflecting on the significance of work to well-being

Allow 10 minutes

Think about work that you do. This can be paid employment, voluntary work, household work or work as a carer, for example. Based on your own personal experience, reflect on some of the benefits and difficulties associated with the work. Focus in particular on the impact that the work has on your well-being.

- Make a note of some of the benefits of the work.
- Make a note of some of the difficulties associated with the work.

Provide your answer...

Discussion

Work can have both positive and negative impacts on our mental state and wellbeing. Work and employment can be significant in terms of defining who we are, our confidence, self-esteem and personal development. It can help us build relationships and develop our skill sets, and the financial rewards are helpful. However, work-related stress, and difficulties at work, including problems with co-workers, can also lead to mental distress.

Employment can be good for mental health

The Royal College of Psychiatrists (2017) note that work gives us 'social contacts and support, a way of structuring and occupying our time, physical and mental activity, an opportunity to develop and use skills, social status, a sense of identity and personal achievement, and monetary and other resources needed for material well-being'. Contrary to this, those who are unemployed or out of work for more than 12 weeks 'are between 4 and 10 times more likely to suffer from depression and anxiety'; they generally also 'have poorer physical and mental health overall, consult their GP more, are more likely to be admitted to hospital, and have higher death rates'. Unemployment is also linked with an increased rate of suicide (Royal College of Psychiatrists, 2017).

A press release issued by the Department of Health in 2014, based on the UK Chief Medical Officer's (CMO's) annual report of the same year, also noted that 'employment is good for mental health' (Department of Health, 2014a). In the report Professor Dame Sally Davies made 14 recommendations to improve public mental health services (Department of Health 2014b). The following key points were highlighted in the report:

- 70 million working days were lost to mental illness at a cost of £70-100 billion to the UK economy in the previous year.
- People with a chronic physical condition (such as a heart condition) have a 2.6 fold increase in the odds of having a mental illness.
- The number of days lost to stress, depression and anxiety had increased by 24% since 2009.
- 50% of adult mental illness started before the age of 15, and 75% by the age of 18.
- 75% of people with diagnosable mental illness received no treatment at all.
- 60-70% of people with common mental health conditions such as depression and anxiety were in work, and more was needed to be done to help people with mental health conditions remain in work.

This latter point was emphasised as a 'stark issue' by Professor Davies, stating that 'it is crucial that we take action to help those people stay in employment to benefit their own health as well as the economy' (Department of Health, 2014a). Professor Simon Wessely, President of the Royal College of Psychiatrists at the time, welcomed the report, with its particular emphasis on the importance of employment to good mental health, and endorsed 'the CMO's call for employment becoming a routine outcome indicator for mental health services – an outcome that has real world relevance'. He further commented that 'more support is needed to keep those who are at risk of losing their jobs from joining the ranks of the long term sick' (Department of Health 2014a).

Work can be a cause for stress, anxiety and depression

A report published by the Health and Safety Executive (HSE) in 2016, entitled 'Work related stress, anxiety and depression statistics in Great Britain', provided some useful estimates of the extent of work-related illness and annual working days lost in 2015-16. The data were collected from the Labour Force Survey (a household survey across Great Britain, where participants self-reported work-related illness over the previous 12 months, and included long-standing and new cases), and the Health and Occupation Research Network for general practitioners (to assess whether new cases of mental ill health presented in surgeries across Great Britain were work-related and to confirm their cause). Key findings from the report are presented in Box 10. For the latest figures see the HSE website.

Box 10 Key findings from the HSE report on 'Work related stress, anxiety and depression statistics in Great Britain 2016' (HSE, 2016)

- Stress, anxiety and depression accounted for 37% of all cases of work related ill health and 45% of all working days lost due to ill health in 2015/16.
- The estimated prevalence and incidence rates have remained broadly comparable with little change for more than a decade.
- The total number of cases of work-related stress, depression or anxiety in 2015/16 was 488,000 (prevalence rate of 1510 per 100,000 workers).
- The number of new cases was 224,000 (incidence rate of 690 per 100,000 workers).
- The total number of working days lost in 2015/16 due to stress, anxiety and depression was 11.7 million days (an average of 24 days lost per worker).
- Stress was found to be more prevalent in public service industries, such as education, health and social care, public administration and defence. Healthcare workers, teaching professionals, business, media and public service professionals all showed higher levels of stress as compared to other occupational groups.
- The main factors cited by respondents as causing work-related stress, anxiety or depression were workload pressures (including tight deadlines), excessive responsibility and a lack of managerial support.

A further breakdown of the data showing prevalence figures by industry, occupational group, gender and age is provided in Tables 3 and 4.

Table 3 Prevalence figures (mean number of cases per 100,000) for work-related stress presented by industry and occupational group (adapted from HSE, 2016)

Industries 2016	**Mean number of cases per 100,000**	**Corresponding Ratios**
Public administration and defence	2030	1:49
Human health and social work	2020	1:50
Education	1780	1:56
Average for all industries	1230	1:81
Occupational groups 2016	**Mean number of cases per 100,000**	**Corresponding Ratios**
Welfare professionals	4990	1:20
Nursing and midwifery	3010	1:33
Teaching	2530	1:40
Professional occupations	1980	1:50
Average for all occupational groups	1230	1:81

Table 4 Prevalence figures (mean number of cases per 100,000) for work-related stress segregated by gender and age group over a 3-year period, from 2013-14 to 2015-16 (adapted from HSE, 2016)

Means across all age groups	**Mean number of cases per 100,000**	**Corresponding Ratios**
Female	1820 (60%)	1:55
Male	1190 (40%)	1:84
Means across three age groups	**Mean number of cases per 100,000**	**Corresponding Ratios**
Females 25-34 years	1790 (29%)	1:56
Females 35-44 years	2250 (36%)	1:44
Females 45-54 years	2170 (25%)	1:46
	6210 (total)	
Males 25-34 years	1100 (28%)	1:91
Males 35-44 years	1270 (32%)	1:78
Males 45-54 years	1590 (40%)	1:63
	3960 (total)	

Occupational groups with the highest prevalence rates broadly aligned with professions found in the above industries (see Table 3). Welfare, nursing and midwifery, and teaching professions all had statistically significantly higher rates of work-related stress, anxiety and depression than the rate for all occupational groups combined (HSE, 2016) (see Table 3).

The HSE report (2016, p. 3) noted that 'longitudinal studies and systematic reviews have indicated that stress at work is largely driven by psychosocial factors and is associated

with common conditions such as heart disease and anxiety and depression and may play a role in some forms of musculoskeletal disorders'. According to the Labour Force Survey, the predominant causes of work-related stress were workload, in particular tight deadlines, too much work or excessive pressure or responsibility. Other identified factors included lack of managerial support, organisational changes at work, role uncertainty (lack of clarity about job, uncertain about expectations), job insecurity and low personal 'control'. The general practitioners network concluded that workload pressures were the predominant factor for mental ill health, with interpersonal relationships and changes at work representing significant factors (HSE, 2016).

The report concluded that 'work-related stress, depression and anxiety accounted for 37% of work-related ill health and 45% of days lost in 2015-16'. Occupations and industries reporting the highest rates were consistently in the health and public sectors of the economy. Reasons cited as primary causal factors were also consistent over time, and centred around workload, lack of managerial support and organisational change.

- Looking at the data presented in Table 4, what can you infer about gender, age and work-related stress?
- Between 2013-14 and 2015-16, the mean prevalence rates for females was 1.5 times higher than for males in Great Britain (1820 compared to 1190 per 100,000). The prevalence rates also differed according to age groups between males and females: the prevalence rate was higher for 35-44 year old females compared with 25-34 or 45-54 year old females; in contrast, the prevalence rate was higher for 45-54 year old males compared with 25-34 or 35-44 year old males.

The HSE report considered that 'higher rates reported by females is likely a product of the proportion of females in the public services and vocational occupations such as teaching and nursing and cultural differences in attitudes and beliefs between males and females around the subject of stress' (HSE, 2016, p. 6).

Reflect on your learning in this section.

- What were the key issues or concepts that stood out for you?
- Were you able to answer either of the questions posed in this section?
- Are women more likely to suffer from an anxiety disorder than men?
- Is work good or bad for your mental health?

We will pick these questions up again briefly in Section 5 before considering interventions for anxiety.

5 Exploring anxiety part 3

At the end of the previous section, you were asked to reflect on the following questions.

- Are women more likely to suffer from an anxiety disorder than men?
- Is work good or bad for your mental health?

What were your thoughts around these two questions? How did you answer them? In this section, we are going to examine the evidence in more detail, before turning to interventions for anxiety.

5.1 Are women more likely to suffer from an anxiety disorder than men? Revisiting the question

- Women, people under the age of 35, and those living with chronic physical conditions are disproportionately affected by anxiety disorders (Remes et al., 2016).
- The prevalence rates of anxiety disorders in females were almost twice that found for males when data were compared across different countries (Remes et al., 2016).
- Although a lack of representation from developing and under-developed parts of the world could have affected the prevalence estimates and there is a need for further study of the prevalence of anxiety in these parts of the world, DALYs attributable to anxiety disorders were also 1.9 fold higher in females than in males according to the WHO Global Burden of Disease 2010 study data (Whiteford et al., 2015).
- The higher rate in females appears to have remained constant between 1990 and 2010 (Whiteford et al., 2015).
- In Great Britain, between 2013-14 and 2015-16, the mean prevalence rate for work-related stress, anxiety and depression was 1.5 times higher for females than for males (1820 compared to 1190 per 100,000) (HSE, 2016).

So evidence from different sources suggests that both prevalence and DALYs attributed to anxiety disorders are higher in women than in men. The UK data suggests there are further disparities in terms of age groups affected. While these data serve as useful indicators, they do not provide any clues as to causation, the direction of the effect or the extent to which different factors could influence development of anxiety disorders in women. Neither do they offer further insight into differences in the prevalence of different types of anxiety disorders related to gender.

Higher prevalence rates in women and younger adults (males *and* females under the age of 35) could be a result of complex interactions between biological, psychosocial and lifestyle factors, and susceptibility to anxiety disorders. Claims made for reasons why women have 'higher levels of anxiety' being primarily down to roles as working mothers or linked to the modern day demands on women − that they are more likely to be employed now than in the past, simultaneously looking after family, caring for elderly relatives, managing the household and juggling commitments with work (Mail Online, 2016) − need careful scrutiny, and should be supported by research evidence. Without detailed, large-scale, longitudinal studies (where data are gathered over an extended period of time,

spanning months to years), and well-controlled comparison studies that take account of confounding factors such as age, diet, lifestyle, marital and employment status, physical and psychological health, family and socio-economic circumstances (e.g. cultural and personal attitudes towards mental health, and help-seeking behaviours) claims such as this remain speculative. Psychological and biological as well as psychosocial differences between the sexes in the response to stress require further evaluation. Relevant questions include:

- Are women likely to respond to self-reported questionnaires, to disclose and talk about their emotions, and to seek help (and consequently receive a clinical diagnosis) more often than men?
- Do women and men use the same coping strategies when faced with stress?
- Are women more likely to 'internalise' their thoughts and be more prone to rumination and anxious or negative thinking than men?
- Are men more likely to 'externalise' their emotions and to develop other problems, for example by turning more to alcohol or substance use?
- Could biological differences influence the development of anxiety disorders?
- What bearing do culture, societal attitudes towards mental health and psychosocial factors have on these perceived differences (e.g. differences between 'Western' versus 'Far-Eastern' cultures)?
- Are there key cultural differences between males and females in terms of attitudes and beliefs around the subject of stress and mental health problems?

The questions highlighted above emphasise the significant gaps in research that remain. Let's now examine the evidence around work and mental health.

5.2 Is work good or bad for your mental health? Revisiting the question

Work has clear long-term benefits for mental well-being, but can also be a cause of stress, anxiety and depression. Work-related stress, anxiety and depression accounted for 37% of work-related ill health and 45% of days lost in Great Britain in 2015-16 (HSE, 2016). Occupations and industries reporting highest rates were consistently in the health and public sectors of the economy, with reasons self-reported as primary causal factors also consistent over time – these centred around workload, lack of managerial support and organisational change (HSE, 2016). However, it is also worth noting that:

- People with a chronic physical condition (such as a heart condition) have a 2.6 fold increase in the odds of having a mental illness.
- Around 60-70% of people with common mental health conditions such as depression and anxiety are in work, and that
- Up to 75% of people with diagnosable mental illness receive no treatment at all (Department of Health, 2014a and 2014b).

So once again, there is no 'straightforward' answer to the question posed. Work can be considered to be good for mental health, but a negative outcome (stress, anxiety and depression) may depend on a number of factors including, for example, the nature of the work (the profession, the type of work involved), organisational or management structure

and stability, job security, the social environment, level of support, individual differences (in temperament and state of physical and mental health), interaction with others (psychosocial and interpersonal levels), other capabilities (e.g. time and self-management, organisation, etc.), coping strategies (work–life balance), and social and cultural attitudes and beliefs towards work. Once again, significant gaps in research remain.

5.3 Work, gender and mental health − examining issues further

Activities 7 and 8 explore some of the issues a little further.

Activity 7 Examining issues further − Part 1

Allow 30 minutes

Ahead of Mental Health Awareness Week 2016, a survey commissioned by Aviva (an Insurance Company) found that 24% of a representative sample of the UK adult population living with stress, anxiety or depression in the past year, did not seek any support. Over a third of people surveyed said that work had contributed to mental health problems and around a fifth said that juggling work–life balance played a major role in causing stress.

Read the two articles below, then critically reflect on and answer the questions that follow.

Sara Bean (2016) Work is most common cause of stress, anxiety and depression

Aviva (2016)
UK adults accepting mental health issues as the new norm as many do not seek help for stress, anxiety and depression

1. How was the research carried out? What was the sample size? How representative was this of the population as a whole?
2. Amongst the population sampled, what reasons were cited for people not seeking help for mental health problems?
3. What were the most common mental health conditions reported?
4. Were there any gender differences in attitudes towards help-seeking?
5. Other than work pressures, were any other issues reported as a significant cause of anxiety and depression?
6. Of those who had experienced a mental health problem, what proportion said that they had successfully recovered from their mental health condition or that it was being effectively managed?

Discussion

1. This was an online survey carried out by ICM Research in August 2015, for Aviva UK Health. The methodology section of the press release issued by Aviva states that ‘respondents were invited from ICM’s online panel and 2,004 interviews were conducted amongst a nationally representative sample of the UK adult population’. From this information alone, and without a further examination of the sample data, the demographic characteristics or clinical diagnoses of the 2,004 respondents, it is unclear in what respects they were considered a ‘nationally

representative sample of the UK adult population'. The figures quoted, based on this sample population, have been extrapolated to the general population 'as population estimates by single year of age and sex for local authorities in the UK, mid-2014'. According to the survey, 24% of the 2,004 respondents (481 people) aged 18 and over reported having suffered from stress, anxiety or depression in the past year but had not sought help. The report extrapolates this figure to 12 million (i.e. 24% of the 50,909,098 UK adult population in 2014), so a major headline in the news item and press release, claiming that '12 million UK adults suffered from stress, anxiety or depression in the past year and did not seek help' turns out to be an estimate based on a relatively small sample population, and not an actual statistic. Proportionally the sample size (2,004 respondents) represents 0.004% of the UK population figure quoted (50,909,098), so the percentages reported need to be considered in this context.

2. Stigma associated with having a mental health problem and embarrassment were cited. 32% of those surveyed reported that they would be too embarrassed to tell people if they had a mental health issue. For those who had previously experienced mental health problems this figure was even higher (42%).
3. Stress (33%), anxiety (29%) and depression (23%) were the most common mental health conditions experienced in the past year. More than half (55%) of those who reported stress did not seek support, while just under half (48%) did not seek help for anxiety. Although more people took action on depression, 29% said they did not ask for support.
4. According to the data provided, men were less likely than women to seek help for anxiety (51% vs 53%) or depression (69% vs 73%), whereas men were more likely to seek help for stress (48% vs 43%).
5. Work pressures were cited as the most common cause (34%). Financial concerns (worries over money) were also reported as a main cause for those with anxiety (27%) or depression (28%). 21% said financial concerns were a significant cause of stress. Juggling work–life balance (20%) reportedly had a significant role in causing stress, whereas relationship difficulties (25%) and body image (21%) were reported as contributing to depression. Poor body image was a notable cited cause for depression amongst 18-24 year olds (37%).
6. 36% had successfully recovered, and 35% said their condition was being managed effectively. However, 17% did not feel they were getting the right treatment.

Activity 8 Examining issues further − part 2

Allow 30 minutes

A study carried out in the United States has found that the odds of generalised anxiety disorder and depression were markedly greater among women who earned less than their male counterparts, with whom they were matched on education and years of experience. The results were published in the peer-reviewed journal *Social Science and Medicine* (Platt et al., 2016). The press release issued by Columbia University starts off with the following statement: 'For every dollar an American man makes, his equally qualified female counterpart makes just 82 cents' (Columbia University Mailman School of Public Health, 2016). Inequality in pay is a significant concern, but

can a causal relationship with anxiety and depression be established based on this difference alone?

Read the two articles below, then critically reflect on and answer the questions that follow.

Eurekalert (2016)
Wage gap could explain why women are more likely to be anxious and depressed than men. Women may internalize wage gap as reflective of perceived inferior merit. Columbia University's Mailman School of Public Health

Columbia University Mailman School of Public Health (2016)
Wage gap may help explain why more women are anxious and depressed than men

1. Where was the study carried out? Who were the researchers?
2. Who funded the study? Were any conflicts of interest declared?
3. How was the study carried out? What was the sample size? How representative was this of the population as a whole?
4. What were the principle findings of the study?
5. How did the authors interpret these findings?
6. Can a direct causal relationship between disparity in pay and anxiety or depression be established from the findings of this study? Are there any alternative explanations or contributing factors?

Discussion

1. The study was carried out in the United States by researchers at Columbia University's Mailman School of Public Health. Katherine Keyes, Assistant Professor of Epidemiology was the senior author. Co-authors (Seth J. Prins, Lisa Bates and Jonathan Platt) were all based in the Department of Epidemiology at Columbia University.
2. The work was supported in part by a National Institutes of Mental Health Psychiatric Epidemiology training grant. No conflicts of interest were reported by the authors.
3. The findings were based on survey data from a 2001-2002 US 'population-representative' sample of 22,581 working adults in America aged 30-65. The researchers tested the impact of structural wage disparities on depression and anxiety outcomes, according to criteria in the Diagnostic and Statistical Manual, version IV (DSM-IV). From the press releases, it is unclear where the sample was derived (across one or more counties or States) and in what ways the sample was considered representative of the US population (demographic information) – so it would be useful to follow up on this by looking at the published study (Platt et al., 2016). The fact that diagnostic criteria were used to assess mental health outcomes, rather than reliance on self-reports alone, suggests a degree of rigour to the methodology.
4. The overall odds of past-year anxiety were more than 2.5 times higher for women than for men. Where women's income was lower than their male counterparts (matched for education and years of experience), their odds of having an anxiety disorder was more than four times higher. For women whose income equalled or exceeded their male counterparts, their odds of anxiety disorder were greatly decreased. Similarly, the odds of an American woman being diagnosed with depression in the past year was nearly twice that of men. However, among women whose income was lower than their male counterparts, the odds of major

depression were nearly 2.5 times higher than men. Among women whose pay equalled or exceeded their male counterparts, their odds of depression were no different than men.

5. They consider pay inequality, and the underlying discrimination and biases that may be associated with it, as the reason why women experience more anxiety and depression than men. Specifically, that 'some of the gender disparities in depression and anxiety may be due to the effects of structural gender inequality in the workforce', and the 'norms, expectations, opportunities surrounding the types of jobs women occupy and the way those jobs are valued and compensated relative to men'. Jonathan Platt, PhD student and lead author stated that 'the social processes that sort women into certain jobs, compensate them less than equivalent male counterparts and create gender disparities in domestic labor have material and psychosocial consequences'. He also said 'if women internalize these negative experiences as reflective of inferior merit rather than the result of discrimination, they may be at an increased risk for depression and anxiety disorders'. According to Katherine Keyes, senior author of the study. 'while it is commonly believed that gender differences in depression and anxiety are biologically rooted, these results suggest that such differences are much more socially constructed than previously thought, indicating that gender disparities in psychiatric disorders are malleable and arise from unfair treatment'. They refer to a need to review policies which 'must go beyond prohibiting overt gender discrimination' relating their findings to a clear political agenda.
6. It would not be possible to infer a causal relationship from the information provided. The authors place emphasis on gender discrimination as a prominent explanation for mental health disparities between men and women. Although the findings highlight an *association* between gender disparity in pay and mental health outcome based on this sample population, a *causal relationship* or *the direction of interaction* has not been established, so the claim that 'gender disparities in psychiatric disorders are malleable and arise from unfair treatment' cannot be substantiated. Similarly, this particular study did not investigate whether women 'internalize these negative experiences as reflective of inferior merit rather than the result of discrimination' so the impact that this might have on increased risk for depression would warrant further research but is speculative in the context of this study. The press release does refer to past research that has looked at factors like differences in sex hormones and coping mechanism, but has so far not provided an adequate explanation. The same could arguably be said of the issue of disparity in pay – while a (partial) contributory factor, this too 'has not provided an adequate explanation' when subjected to a critical reflection. Apart from those already mentioned (sex hormones, coping mechanisms, pay gap) what other factors could be contributing to the gender disparity? Income is a strong predictor of health outcomes, including mental health (the lower the income, the greater the risk), but questions remain around psychological factors, differences between full-time and part-time employment, employment choices (working hours), occupational and employer differences (including social environment, management structure, working arrangements), diet and lifestyle, pre-existing health conditions and so on. It would therefore be worth following up by reading the published paper and seeing to what extent these issues have been considered and what other confounding factors (other than education and experience) have been taken into account.

5.4 The treatment and management of anxiety disorders – an overview

What may be perceived as stressful to one person is not necessarily always perceived as such by another. People can react to situations in different ways. Let's take a moment to reflect on what we have learned about stress and anxiety. Physical or mental 'stress' can be caused by a variety of external factors including work (pressures from deadlines, work overload, or the loss or change of a job), financial strains (mortgages, bills, debts, unforeseen expenses, unemployment), relationship problems (break-up or divorce), status of one's general health (serious illness, accidents, trauma), and major life events (having children, moving home, getting married, exams, being the victim of a crime or of violence, etc.). Anxiety can develop as a result of trauma or significant life events, childhood or past experiences, a complex interplay between biological, genetic, environmental and psychosocial factors, underlying medical causes, or side effects of certain medications. Physical and mental wellbeing and personality (temperament) or thinking style can also impact on how anxiety can develop and is maintained.

Some of the main forms of treatment and management of stress and anxiety disorders are summarised in Box 11.

Box 11 Brief overview of the treatment and management of anxiety disorders

Treatment

- **Cognitive behavioural therapy (CBT)** − 'talk therapies' – strategies to reduce anxiety (e.g. shifting attitude, managing underlying feelings or emotions such as grief or anger, identifying and modifying 'catastrophic' thinking), exposure therapy ('facing your fears').
- **Pharmacological therapies** – anxiolytic and antidepressant drugs.
- **Combined therapies** − CBT with pharmacological therapy or augmented pharmacological therapies.

Management

Making adjustments to lifestyle, eating regularly, keeping to regular sleep schedules, engaging in leisure activities, managing own expectations (avoiding perfectionism), seeking assistance for difficulties (e.g. relationship problems), understanding factors that contribute to (or can trigger) vulnerability, finding healthy ways to deal with feelings (e.g. talking to family and friends, or going for a walk), seeking and accepting professional support, relaxation techniques (e.g. meditation, visualisation, yoga), eschewing 'avoidance' (avoidance of situations or interactions maintains anxiety).

Activity 9 Treatments for Anxiety

Allow 30 minutes

Listen to the podcast below and consider the questions that follow. You might wish to listen to the entire recording first and review this again thinking specifically about the questions the second time around. Alternatively, you can consider the questions as

you listen to the recording the first time around. Choose whichever approach suits you best.

Audio content is not available in this format.

BBC World Service Health Check 'Anxiety' Extract 2

Claudia Hammond from the BBC talks about anxiety, speaking to Claire and Scott about their experiences of anxiety and the effect it has on them, and to Nick Grey, a clinical psychologist from the Centre for Anxiety Disorders and Trauma at the Maudsley Hospital in London, in this second part of a recording broadcast in 2014 (you listened to the first part in Activity 4).

1. In the interview, Claire talks about different treatments that she has been receiving for her social anxiety disorder. What are these?
2. How has Claire come to terms with her anxiety?
3. Scott has also come to terms with his anxiety. How does he manage his anxiety?
4. Both Claire and Scott refer to the amygdala as being affected by treatment. Why is this part of the brain important to understanding anxiety?
5. How does Scott define ‘resilience’ in the context of anxiety and depression?
6. Nick Grey describes some common ‘precautions’ that people get into a habit of taking when experiencing severe acute anxiety or a panic attack ‘to try to prevent the worst from happening’. What example does he give?
7. Why does he not consider this to be an effective way of managing anxiety?
8. What is exposure therapy and how can it be used for treating social anxiety?
9. Is it possible to rid people of their anxiety?

Discussion

1. Claire mentions taking Sertraline, a selective serotonin reuptake inhibitor, or ‘SSRI’, which also works as an antidepressant. She says that she has also received a course of cognitive behavioural therapy which helped to ‘retrain’ her brain by ‘neutralising the negative thoughts’ that she had and replace these with ‘more rational ones’. She exercises a lot, going to the gym three times a week. And she says the ‘biggest’ treatment for her has been exposure therapy, where she ‘puts herself in situations that make her uncomfortable’.
2. She has accepted that ‘being nervous is a completely natural emotion’ and ‘not a symptom of a bigger problem’ and has a positive outlook (‘accepting that feeling, but doing it anyway because it might be fun, and it’s never as bad as you think it’s going to be’).
3. Scott mentions that he recognises that his anxiety may never be ‘cured’ but that it is ‘an acceptable part of who he is – and his personality’. He talks about SSRI antidepressants and benzodiazepines, a class of tranquillisers that he says help with severe anxiety. He also refers to mindfulness meditation which he says can be highly effective, and relaxation techniques such as breathing exercises, and the importance of sleep and regular exercise. He also stresses the importance of maintaining an optimistic outlook to mitigate anxiety.
4. Scott refers to the amygdala as the ‘seat of fear’ and Claire says that exposure therapy can ‘retrain her amygdala not to go off every time she is in the situation in the future when there is no danger’. Recall the function of the amygdala, a key

brain structure within the temporal lobes involved in the neural circuitry of anxiety, which was discussed in Section 4. Parts of the amygdala are involved in triggering the responses we associate with fear (e.g. submission, fleeing, or 'freezing' on the spot). Other regions within the amygdala elicit feelings of bliss or peacefulness, or evoke aggression and attack.

5. He describes resilience as a 'trait that... makes you resistant to developing anxiety and depression', that is 'somewhat encoded into your genes', but 'also something that can be learned'.
6. He gives the example where 'your heart's racing very, very fast and you think you're going to have... a heart attack or you're going to pass out it makes sense to sit down, try and take weight off your feet. Do some breathing exercises to... calm your breathing down. Because you have this belief that otherwise you're going to die'.
7. Nick Grey explains 'you never learn that if you didn't do these kinds of precautions that actually you'd still be OK', and that 'whilst a panic attack is very frightening and feels awful it's not in fact dangerous'. He identifies cognitive behaviour therapy which helps people learn that some of the things they do to help themselves are probably unnecessary, as one of the most effective treatments for anxiety and panic attacks.
8. Claudia notes that exposure therapy allows the individual to 'gradually get used to things that [she] fear[s]' referring to Claire's social anxiety. Nick explains that 'trying to hide your anxiety or trying to... manage your image... actually makes you more self-focused, more self-conscious', and one of the things that they would do as part of treatment for people with social anxiety is to video record them, so they can compare how they feel while 'in the moment' with how they actually come across in the recording. He notes that 'almost always people are surprised by how they look and how they sound on video compared to how it felt to them'. And that people tend to have a visual image of themselves, of how they're coming across – looking red in the face, looking anxious or having a panic attack.
9. Nick explains that the aim is not to rid people of anxiety, which may not be a realistic goal, but rather to have a discussion around 'the normality of fear and worry and anxiety'.

5.5 Cognitive behaviour therapy (CBT) and exposure therapy

CBT is an evidence-based psychological intervention that can be effective for the treatment of anxiety disorders. It is recommended in line with the stepped-care approach set out in the National Institute of Health and Care Excellence guidance (NICE, 2014). CBT identifies connections between feelings, thoughts and behaviours and develops practical ways to manage patterns of behaviour that are causing problems.

Exposure therapy is a form of desensitisation, which involves gradually exposing the person to the object or situation that they fear, but in a safe and controlled way and working with a therapist. A sense of control, for example, over a phobia can be developed through repeated experiences, but this does need to be carefully managed to avoid

causing further distress and relies on close interaction and communication with the therapist.

How does CBT work? What does it involve?

CBT involves working with a therapist to identify negative thinking patterns and behaviours which may be causing difficulties and finding effective coping strategies to challenge these by, for example, changing the way a person feels about a situation to help them to change their behaviour moving forward (Royal College of Psychiatrists, 2013; updated in 2015). This psychological therapy is based on the concept that the way we think about a situation can influence our emotions and subsequent behaviours. If we perceive or interpret a situation in a negative light, then the experience associated with it is likely to lead to negative emotions, which in turn can lead to the development of certain types of behaviours or actions. Negative thinking patterns (or 'cognitive distortions' – see Section 4) often start during childhood, and over time, assumptions can be reinforced until as an adult they can frequently interfere with and affect the way an individual feels in their everyday life (see Figure 1).

Figure 1 Model of anxiety based on Beck's cognitive triad model (Beck, 1976).

If negative interpretations of situations are not challenged, the patterns of thoughts, feelings and behaviours can be repeated as part of a debilitating and unpleasant cycle (see Figure 2).

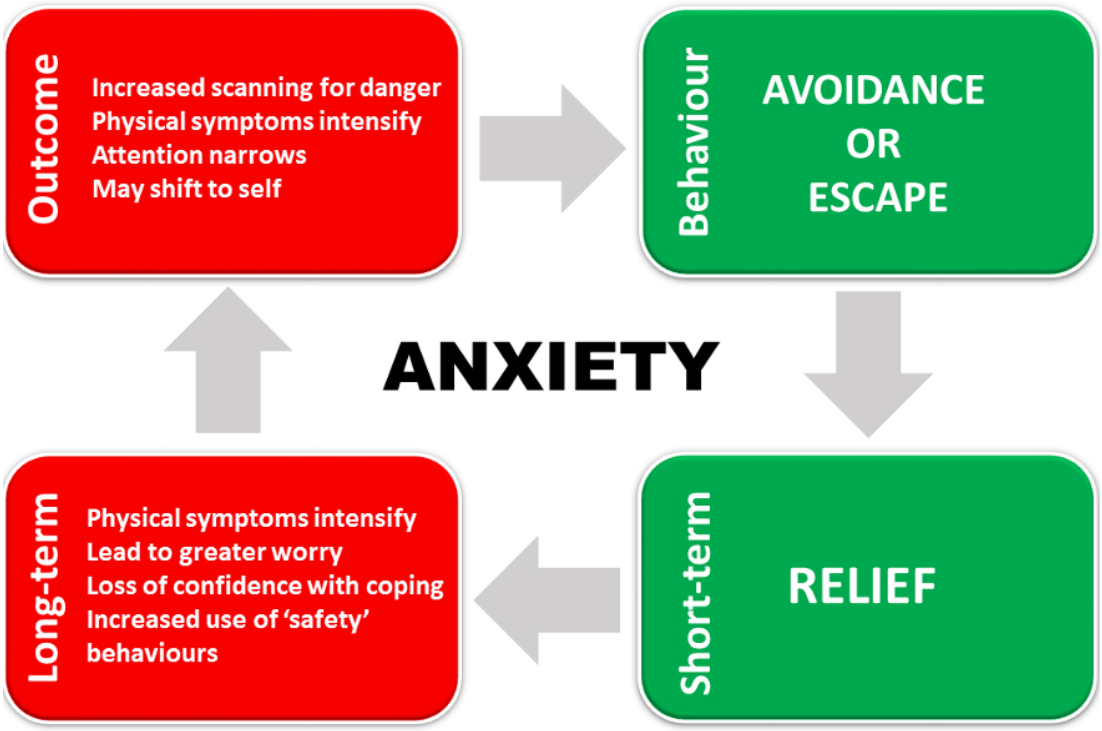

Figure 2 Anxiety as a perpetual negative cycle.

CBT can help make sense of overwhelming problems by breaking them down into smaller parts, allowing connections and how they affect an individual to become clear. The five main areas of assessment that impact on each other are indicated in Figure 3. For example, how you think about a problem can affect how you feel physically and emotionally.

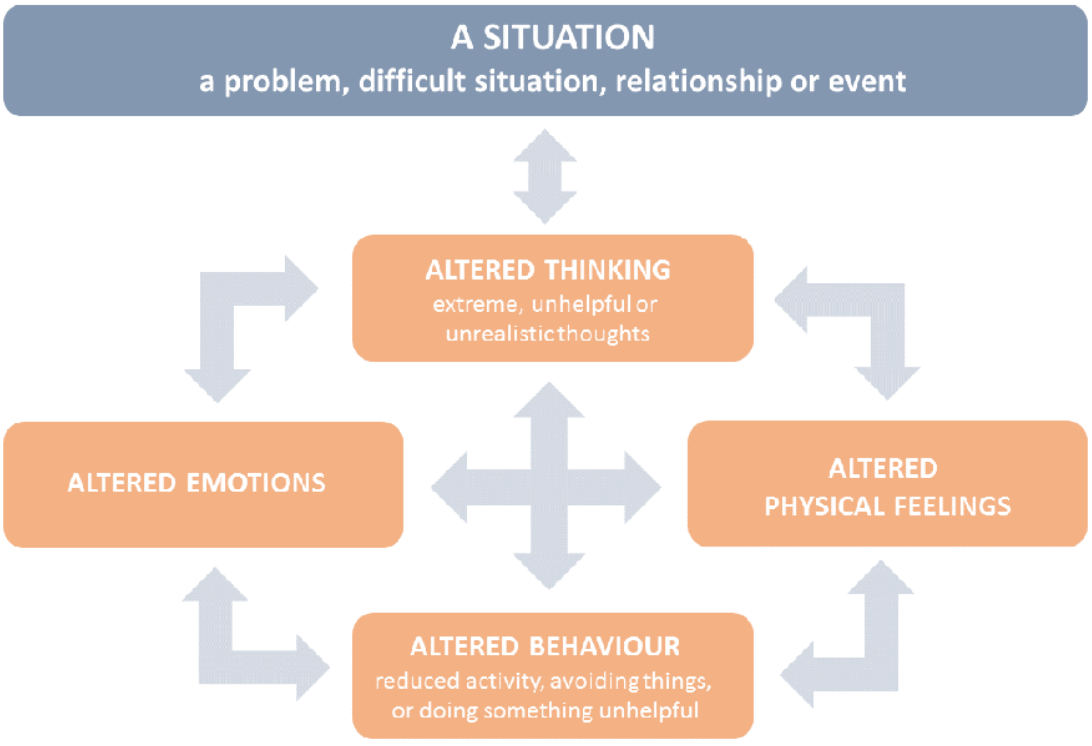

Figure 3 Five areas of assessment for CBT

(based on the Royal College of Psychiatrists, 2013).

CBT can help break the vicious cycle of altered thinking, feelings and behaviour, by helping the individual to recognise and alter their behaviour. CBT can be administered individually by a therapist (usually between 5-20 sessions), within a group, or via a self-help book or online. CBT typically concentrates on addressing current problems, but the therapist may also ask questions about past experiences to understand how these may be affecting the person in the present. Problems are broken down and addressed in separate elements (see Figure 3). Keeping a diary can help identify patterns of thoughts, emotions, physical feelings and actions, and the therapist will work with the individual to explore those that are unhelpful or unrealistic, and how they can be changed through practice by, for example, questioning a self-critical or upsetting thought or an action that would have a negative impact and make the individual feel worse, and replacing these with more helpful ones.

A course of CBT can last a few weeks or up to 6 months. It depends on the nature of the problem and how the therapy works for the individual. It is not a 'quick fix', and may not be for everyone, and there is the possibility that symptoms of anxiety may return, so practicing the skills learned (i.e. as part of 'homework' outside of therapy sessions) is important and undertaking further courses of therapy may be required. CBT can also be combined with medication (anxiolytic or antidepressant drugs) to treat anxiety. Other psychological therapies include interpersonal therapy (IPT) and psychodynamic psychotherapy. Anxiety may also be managed through mindfulness-based stress reduction and exercise. The NHS UK website also lists a number of mental health apps that may be of interest.

5.6 Pharmacological therapies

Seven broad categories of medications can be used to manage the symptoms of anxiety. These are:

- Selective serotonin reuptake inhibitors (SSRIs)
- Serotonin and noradrenaline reuptake inhibitors (SNRIs)
- Monoamine oxidase inhibitors (MAOIs)
- Tricyclic antidepressants (TCAs)
- Benzodiazepines (tranquillizers)
- Anticonvulsant drugs (e.g. pregabalin)
- Beta-blockers (e.g. propranolol)

SSRIs, SNRIs, MAOIs and TCAs can be effective for treating anxiety, but are also used for treating depression and are commonly referred to as 'antidepressant' medications. They have varying degrees of unwanted side effects. SSRIs and SNRIs are most commonly prescribed as 'front-line' pharmacological treatment due to fewer side effects than MAOIs and TCAs.

Benzodiazepines may be prescribed for severe or disabling anxiety, but are less frequently used due to long-term dependence. They are instead typically used as a short-term temporary measure (for example, during crises) in cases where anxiety does not effectively respond to CBT, or to other anxiolytic medications.

An anticonvulsant drug such as pregabalin, normally used to treat epilepsy, may also be prescribed to treat certain anxiety disorders (e.g. for generalised anxiety disorder).

Beta-blockers can help to manage the physical symptoms of anxiety, such as rapid heartbeat, palpitations and tremor, and can be helpful for specific phobias (e.g. getting on an aeroplane) or situations that induce social anxiety (such as performance anxiety or public speaking), but are not thought to address psychological symptoms directly.

Table 5, based on Locke et al. (2015) provides a summary of medications that may be used in the treatment of generalised anxiety disorder and panic disorder.

SSRIS, SNRIs and MAOIs work by prolonging the activity of the neurotransmitters serotonin and noradrenaline which are involved in regulating mood, within defined pathways in the brain. SSRIs, developed in the 1980s, specifically prolong the action of serotonin at synapses (the junctions between nerve cells) by preventing its reuptake back into the nerve cells that released it (where it would normally be broken down and recycled). SNRIs, developed in the 1990s, act on noradrenaline as well as serotonin, and are sometimes used for more severe anxiety as well as for depression.

TCAs were developed in the 1950s, and their name ('tricyclic') reflects their chemical structure which is composed of three 'rings' ('tri' meaning three; 'cyclic' meaning ring-form or circular). They also prolong the action of noradrenaline and serotonin but have more severe unpleasant side effects than SSRIs or SNRIs.

MAOIs prevent the breakdown of noradrenaline and serotonin by inhibiting the action of the enzyme (called monoamine oxidase) responsible for this process, but side effects can be severe and interactions with certain foods mean that a careful diet needs to be followed if prescribed (i.e. in instances where other anxiolytic medications have not worked).

Table 5 Medications used for the treatment of generalised anxiety disorder and panic disorder (adapted from Locke et al., 2015)

First-line medications
Selective serotonin reuptake inhibitors (SSRIs)
Escitalopram (Lexapro)
Fluoxetine (Prozac)
Fluvoxamine[a]
Paroxetine (Paxil)
Sertraline (Zoloft)
Serotonin-noradrenaline reuptake inhibitors (SNRIs)
Duloxetine (Cymbalta)[b]
Venlafaxine, extended release (Effexor XR)
Second-line medications
Tricyclic antidepressants (TCAs)
Amitriptyline
Imipramine (Tofranil)
Nortriptyline (Pamelor)
Anticonvulsants
Pregabalin (Lyrica)[b]
Third-line medications

Monoamine oxidase inhibitors (MAOIs)
Isocarboxazid (Marplan)
Phenelzine (Nardil)
Tranylcypromine (Parnate)
Augmentation
Benzodiazepines [c]
Alprazolam (Xanax)
Clonazepam (Klonopin)
Diazepam (Valium)[b]
Lorazepam (Ativan)

Notes: Medications listed in order of most-to-least commonly used: (a) can be used for panic disorder; (b) can be used for generalised anxiety disorder; (c) Benzodiazepines can be used together with other medications as part of 'augmentation' therapy during acute treatment. Dependence, tolerance and escalating doses to obtain the same effect over long-term use can be problematic, therefore short-term prescription and emphasis on acute management of uncontrolled anxiety is advised. Also short-acting benzodiazepines such as alprazolam are not preferred due to higher risk of addiction and adverse effects.

Conclusion

Use the visual summary below to reflect on your learning for this course, and on the topic of anxiety. What were the key issues or concepts that stood out for you?

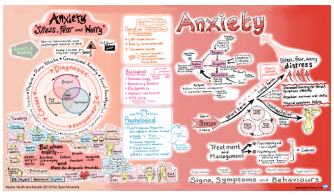

Figure 4 Visual Summary 'Anxiety'

We have provided you with a larger version of this image in PDF format.

This graphic illustration brings together many of the key themes discussed on the topic of anxiety in this course. Use the summary to reflect on your learning for this topic.

You can now move on to explore depression in the second course in this series. To find out more about this series on OpenLearn, take a look at our Introduction to mental health science article page.

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OpenLearn Course: Emotions and emotional disorders

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