4e. Maintenance of mental wellbeing - application of a biopsychosocial approach

Biological factors

A specific phobia is a disorder characterised by significant anxiety provoked by exposure to a specific feared object or situation, often leading to avoidance behaviour.

- Characterised by excessive or unreasonable fear of a particular object or situation. The fear response tends to be out of proportion to the actual danger posed.
- Diagnosable medical phobia (specific category compared to phobia)

Symptoms:

- Acute stress response – involving physiological changes like those of the fight-flight response.
- Panic attacks – a period sudden onset of intense fear or terror that may be expected (has an obvious cue or trigger) or unexpected (occurs in a calm state)
- Anticipatory anxiety – a gradual rise in anxiety as a person thinks about or 'anticipates' being exposed to a phobic stimulus in the future.

Integration of the 4P factor and biopsychosocial model for a specific phobia:

4P factor model	Biological factors	Psychological factors	Social factors

Predisposing risk factors	Neurotransmitter dysfunction (GABA)		
Precipitating risk factors	Role of the stress response	Classical conditioning (behavioural model)	Specific environmental triggers
Perpetuating risk factors	Long-term potentiation (biological association through constant pairing of CS/fear stimulus and CR/fear response)	Operant conditioning (behavioural model). Cognitive bias including memory bias and catastrophic thinking (cognitive model).	Stigma related to receiving treatment
Protective factors	Use of GABA agonists, controlled breathing and physical exercise	CBT strategies and graduated exposure to phobic stimuli (systematic desensitisation)	Psychoeducation for families/supporters - challenging unrealistic or anxious thoughts, not encouraging avoidance behaviours

Biological factors:

1. **The role of GABA (predisposing):**

Gamma-amino butyric acid (GABA):

- Primary inhibitory neurotransmitter in the CNS
- Works throughout the brain to make post-synaptic neurons less likely to fire (inhibitory)
- Counterbalances the excitatory activity of glutamate, the primary excitatory neurotransmitter

- One of its roles is to fine-tune neurotransmission in the brain and maintain neurotransmission at
  an optimal level.
- Without the effects of GABA activation of post-synaptic neurons might get out of control — can
  lead to seizures similar to epilepsy

➔ Consequently, GABA plays an important role in regulating CNS arousal and is believed to play a role in **anxiety**

➔ GABA also plays a role in anxiety because it acts like a calming agent or 'brake' to the excitatory neurotransmitters that lead to anxiety.

➔ In addition, their flight—flight—freeze response may also be more easily triggered by a variety of stimuli, which in turn may predispose them to developing a specific phobia when compared with people who do not have a low level of GABA

➢ GABA dysfunction can therefore result in low levels of GABA in the brain, as shown by studies of people with a specific phobia (and other anxiety disorders) who are more likely to have a significantly lower GABA level than control group placebo participants with no specific phobia.

➢ The level of GABA in a person's brain may be affected by a wide range of factors.

➢ For example, research studies have implicated factors such as genetic inheritance, central nervous system damage, exposure to prolonged stress, nutritional deficiencies in vitamin B6 and citric acid, and high caffeine intake

2. **The role of the stress response (precipitating):**

- This is considered to be the psychological component of the response to a phobic stimulus. Underlying and interacting with this component is a physiological component that is like the physiological response to a stressor.

- Perceived threat or impending harm at the sight or thought of the phobic stimulus activates the fight-flight response, which accounts for the symptoms associated with phobic anxiety: heart palpitations, sweating, feeling dizzy, etc...
- Physiological stress response can be severe and persist at a high-level for a long time

3. **The role of LTP (perpetuating):**

- Long-term potentiation is believed to play an important role in the learning and memory of fear by strengthening synaptic connections in the neural pathway formed during the learning process, resulting in enhanced or more effective synaptic transmission within that pathway.
- Long-term potentiation can therefore neurologically strengthen the association between a phobic stimulus and a fear or anxiety response through its activity at the synapse.
- The more that the connection is activated through each encounter with a phobic stimulus, the more the connection is strengthened.
- The more the connection is strengthened, the more the relevant neural pathway is strengthened, increasing the efficiency in transferring fear information along the pathway and decreasing the likelihood that what has been learnt will be forgotten.

Biological management options (protective factors/treatments):

- Biological interventions target bodily ('biological') mechanisms believed to be contributing to a phobia or its symptoms.
- These can involve the use of medications that target GABA dysfunction and can minimise the onset or severity of symptoms, and/ or relaxation techniques involving activities such as breathing and exercise that are under the control of the individual and which can also help in the management of symptoms.

1. **Medications - Agonists and antagonists:**

- Drugs and other medications work either by stimulating a neurotransmitter's activity (called agonists) or by inhibiting a neurotransmitter's activity (called antagonists)

Benzodiazepines:

- Benzodiazepines have both anti-anxiety and sleep-inducing properties.
- Agonists
- They are commonly referred to as sedatives, mild tranquillisers or depressants, because they slow down CNS activity.
- They relieve symptoms of anxiety by reducing physiological arousal and promoting relaxation.

How it works:

- Benzodiazepines are a group of drugs ('agents') that work on the central nervous system, acting selectively on GABA receptors in the brain to increase GABA's inhibitory effects and make post-synaptic neurons resistant to excitation.
- Benzodiazepines are GABA agonists. Therefore, they imitate GABA and stimulate activity at the site of a postsynaptic neuron where GABA is received from a presynaptic ('sending') neuron.
- In this way, benzodiazepines have inhibitory effects on postsynaptic neurons throughout the brain and reduce the symptoms of anxiety by imitating GABA's inhibitory effects.

- When a benzodiazepine attaches to a GABA receptor, it changes the shape of the receptor to make it more receptive to the activity of GABA and consequently more resistant to excitation.

- Reducing the excitability of neurons reduces the communication between neurons and, therefore, has a calming effect on many of the functions of the brain.

Side effects and risks:

- Although benzodiazepines tend to be highly effective in reducing anxiety with few side-effects in the short term, there are potential negative consequences associated with their long-term use as they can reduce alertness, abilities dependent on alertness (e.g. concentration, reaction time) and can be addictive.
- Benzodiazepines can also lower inhibitions and make some people more impulsive and likely to take risks, particularly if these medications are mixed with alcohol or other drugs.
- Benzodiazepines treat the symptoms and not the cause of anxiety. Once medication is stopped, symptoms may return if the underlying cause of the anxiety — the specific phobia — has not been addressed.

2. **Exercise:**

- **Exercise is physical activity undertaken to improve or maintain one's physical condition.**
- Exercise has been studied as a possible treatment option for the stress and anxiety symptoms commonly experienced by people with a specific phobia:
    - an extra treatment to complement other interventions,
    - as a stand-alone treatment.

Benefits of exercise:

- Promoting relaxation and thereby providing relief from anxiety
- Providing distraction or 'time out' from phobic stimuli, fear and anxiety
- Coping with the stress and associated physical reactions e.g. stress places demands on the body for energy and in the process uses up stress hormones

- Increasing tolerance to some of the fear and anxiety symptoms e.g. exercise can cause physical reactions like those for fight-flight or a panic attack (e.g. rapid heartbeat, sweating, shortness of breath), enabling symptoms to be experienced in a controlled, nonthreatening way, and possibly improving coping ability through repeated exposure if exercise is regular.
- Altering brain chemistry e.g. promotes release of mood enhancing ('feel good') endorphins, thereby promoting a sense of well-being and indirectly providing relief from anxiety.

Relaxation techniques:

- People experiencing a phobic reaction can over breathe as the respiration rate normally increases in the presence of a perceived threat.
- They may breathe faster and deeper than necessary (hyperventilation) or get into a pattern of uncontrolled rapid and shallow breathing (tachypnea).
- A significant problem is that an abnormal breathing pattern can become habitual and actually increase fear or anxiety. People with specific phobias are believed to develop abnormal breathing patterns.
- Over-breathing may also cause breathlessness — a sensation of shortness of breath or difficulty breathing.

3. **Breathing retaining:**

- **Breathing retraining, also called, breathing training, is an anxiety-management technique that involves teaching correct breathing habits to people with specific phobias.**
- Breathing retraining helps people to maintain correct breathing or correct abnormal breathing patterns when anticipating or exposed to a phobic stimulus, so it may also help to reduce anxiety or alleviate some of its symptoms.

- Breathing retraining can give people control over their breathing and may therefore also help them feel as if they have more control of their fear or anxiety
- An appropriate breathing pattern generally involves slow, regular breaths in through the nose and out the mouth at a controlled rate as opposed to fast and/or irregular, shallow 'chest breathing' or the rapid, deep breathing of hyperventilation.
- The goal is to slow the respiration rate, promote a 'normal', regular breathing pattern, prevent over-breathing and maintain the correct balance of oxygen and carbon dioxide in the blood.

Specific phobia - Psychological factors

Social and Psychological

	Social	Psychological
Predisposing		
Precipitating	Specific environmental trigger (phobic stimulus)	Classical conditioning (e.g. Little Albert forming phobia of white fluffy things) → refer to NS, UCS, UCR, CS, CR etc.
Perpetuating	Stigma	Operant conditioning • Positive reinforcement by getting comfort for being scared • Negative reinforcement by avoiding fear response Cognitive bias • Memory bias (we remember scary

		things/memories when amygdala signals to the hippocampus) • Catastrophic thinking (thinking the worst)
Protective	Psychoeducation • Challenging unrealistic thoughts • Stopping catastrophic thinking • Educate out of avoidance behaviour	Cognitive behavioural therapy (CBT) - Cognitive component: changing biases in thought process while Behavioural component: changing maladaptive behaviours then link to scenario. Systematic desensitisation/graduated exposure: - Box breathing technique, colouring etc. • Fear hierarchy, relaxation techniques e.g. explain how Systematic desensitisation: "This essentially classically conditions the person to not fear the snake" refer to→ (NS, UCS, UCR, CS, CR)

Behavioural model:

- According to the behavioural model, phobias are learned through experience and may be acquired, maintained or modified by environmental consequences such as rewards and punishment.
- Fears are typically acquired through classical conditioning ('Little Albert'). In this way classical conditioning becomes the precipitating factor.
- Fears are typically *maintained* through operant conditioning. In this way operant conditioning acts as a perpetuating factor.
- E.g. receiving comfort (positive reinforcement) when demonstrating a fear response increases the likelihood of that fear response reoccurring.
- E.g. avoidance behaviour leads to reduced fear response (negative reinforcement) increasing the likelihood of avoidance behaviours continuing.

Cognitive model:

- In explaining how a specific phobia may be *acquired* and *persist*, a cognitive model focuses on how the individual processes information about the phobic stimulus and related events.
- E.g. How people with phobias tend to think about a phobic stimulus and its context, and their perceptions, memories, beliefs, attitudes, biases, appraisals, expectations and other cognitive processes that may be relevant.
- E.g. a person with Aquaphobia (fear of water) may engage in catastrophic thinking and imagine the worst possible outcome when confronted by water. Like "If I go near that pool, I will definitely fall in and drown".

Cognitive bias:

- A cognitive bias is a tendency to think in a way that involves *errors of judgment* and *faulty decision-making*. It involves a 'mistake in thinking', which is why it is also sometimes referred to a *cognitive distortion*.
- **Memory bias: occurs when recall or recognition is better for negative or threatening information than for positive or neutral information.**

- **Catastrophic thinking: is a type of negative thinking in which an object or event is perceived as being far more threatening, dangerous or insufferable than it really is and will result in the worst possible outcome.**

Psychological Management Options/Protective factors/Evidence based interventions in the treatment of specific phobia:

1. **Cognitive Behavioural Therapy (CBT): combines cognitive and behavioural therapies to help people manage a mental health problem or disorder.**

- **Cognitive therapy is a type of 'talking therapy' that focuses on the role of 'cognitions' (thoughts, beliefs and attitudes) in determining emotions and behaviour.**
    - Certain maladaptive beliefs and ways of thinking can trigger or 'fuel' mental health problems and disorders.
- **Behavioural therapy is the clinical application of learning theories such as classical and operant conditioning.**
    - Behavioural therapy deals directly with maladaptive behaviours such as avoidance and reduced activity levels, which can maintain or worsen a person's psychological problems.
    - When using behavioural therapy, the therapist exposes their client to new situations that are designed to 'retrain' them so that maladaptive, habitual or reflexive ways of responding become extinguished and new, more adaptive, habits and reflexes are conditioned

CBT for Specific Phobias:

- The cognitive component of CBT aims to assist the client to develop a new understanding that the feared stimuli is not (or is unlikely to be) dangerous, so their avoidance and safety behaviours are unnecessary.
    - Identify cognitive distortions
    - Gather accurate information about their phobic stimulus

    - Evaluate their evidence and counter with alternative, more objective and useful thoughts
- The behavioural component of CBT aims to change or eliminate behavioural responses to a phobic stimulus that are maladaptive through:
    - Relaxation techniques (breathing retraining, exercise)
    - Systematic desensitisation

2. **Systematic desensitisation:**

- **Systematic desensitisation applies classical conditioning principles in a process that involves *unlearning* the connection between anxiety and a specific object or situation and *reassociating* feelings of relaxation (and safety) with that particular object or situation.**

1. Teach client a relaxation strategy
2. Establish a fear/anxiety hierarchy
3. Systematic, graduated pairing of items in the hierarchy with relaxation by working upwards through items in the hierarchy, one 'step' at a time:
    - in vivo (in real life)
    - using visual imagery ('imagination')
    - using virtual reality

→ must be fully calm using relaxation techniques before moving up to the next step.

Specific phobia - Social factors

1. **Specific environmental triggers:**

- **Specific phobias can develop after having a negative and traumatic experience with an object or situation at some point in the past.**
- E.g. a phobia of dogs may result from being bitten by a dog
- E.g. a phobia of driving may result after a serious car accident.

- What factor makes it more likely that a specific phobia could develop by having a negative and traumatic experience with an object?
- The severity of the negative and traumatic experience.
- Using dogs as an example, explain why one person may develop a specific phobia after a single negative experience with a dog and another might not.
- Because of each individual's prior experience. And also due to subsequent (positive) exposures to the object or situation after the negative experience.

2. **Stigma around seeking treatment:**

- **Stigma around seeking treatment: embarrassment or shame about symptoms and concerns about being negatively judged by others may discourage people with a phobia from seeking treatment.**
- Individuals with a phobia are particularly vulnerable to experiencing stigma, which in turn affects their willingness to tell family and friends, let alone to seek treatment from a professional.

Social Management Options/Protective factors/Evidence-based interventions in the treatment of specific phobia:

1. **Psychoeducation for families and supporters:**

- **Psychoeducation: involves the provision and explanation of information about a mental disorder to individuals diagnosed with the disorder to increase knowledge and understanding of their disorder and its treatment.**
- Aimed at both family/friends and person to reduce stigma
- In some cases, psychoeducation may be broadened to include family members and others outside the immediate family who can provide social support.

- **Challenging unrealistic or anxious thoughts:**

- People with a specific phobia typically have anxious thoughts about their phobic stimulus. The anxious thoughts that trigger and fuel phobias are usually negative and unrealistic.
- Unrealistic thoughts are unhelpful thoughts. As well as being triggered by anxious thoughts, they can trigger anxious thoughts, which are also unhelpful as they also fuel and perpetuate
- Learning to challenge unhelpful thoughts is an important step in overcoming a phobia, but this can be difficult when anxious or distressed. Learning to challenge unhelpful thoughts is an important step in overcoming a phobia, but this can be difficult when anxious or distressed.
- Families and other supporters can therefore play an important role in helping a person to cope with or overcome a phobia by encouraging them to recognise and challenge unrealistic or anxious thoughts. to play in helping a person to cope with or overcome a phobia by encouraging them to recognise and challenge unrealistic or anxious thoughts. the phobia.

- **Not encouraging avoidance behaviours:**
- **Avoidance behaviour involves actions that help avert any contact, exposure or engagement with a feared object or situation. Simply staying away from a phobic stimulus is an example of avoidance behaviour.**
- While avoidance can make the individual feel better in the short-term, it prevents them from learning that their phobia may not be as frightening or overwhelming as they think.
- It is important that family members and supporters understand what avoidance behaviour is, the role it plays in perpetuating a phobia and how it can impact on daily functioning.
- It is important for them to recognise that avoidance behaviour is counter-productive and may actually be contributing to the phobia unintentionally and that they should consequently not be encouraging or reinforcing avoidance behaviours.