BMJ Best Practice

Phobias

Straight to the point of care

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Summary

Phobias are one of the most common and treatable psychiatric conditions.

Marked by fear or anxiety in the presence of a specific object or situation.

Assessments are based on self-reports, clinical interviews, and behavioural observations.

Cognitive behavioural therapy, especially exposure therapy, is considered the first-line treatment for patients with frequent symptoms.

Therapy can also be delivered through self-help, internet-assisted, and/or therapist-assisted modalities.

Patient motivation and available resources are important to consider when reviewing treatment options.

Definition

Phobias involve intense fears of specific objects or situations that are triggered upon actual or anticipated exposure to phobic stimuli. Situations in which phobic cues are present are usually avoided or endured with intense anxiety. Excessive fears can cause functional impairments or lifestyle disruptions.

Epidemiology

Phobias are among the most common and treatable psychiatric conditions.[3] In the US, lifetime prevalence is between 9% and 13%, and 12-month prevalence is between 7% and 9%, making phobias the most common of all anxiety disorders.[3] [4] [5] Prevalence rates of 5% to 8% are reported in children and 16% in adolescence.[6] [7] [8] Rates are lower among older adults, ranging from 2% to 5%.[8] [9]

In the UK, the total prevalence for men and women is 18 per 1000.[10]

Women are 2 to 3 times more likely to develop phobias than men.[3] [4] [11]

The odds of developing phobias are significantly less among Hispanic and Asian people and greater among white people.[3] Culture-specific phobic cues are possible among people of varying ethnic and racial backgrounds.[12] [13] Animal fears are found to be more prevalent in Japan and Hong Kong.[14]

Approximately 70% of specific phobics report more than one clinically relevant fear.[3] Animals and heights tend to be the most common stimuli, followed by flying, enclosed spaces, and blood-injection-injury.[3]

Aetiology

Intense anxiety or unexpected panic responses in the presence of specific objects or situations can mark phobia onset, but this is not necessarily the only causal route to phobic acquisition.[15] Disgust, either alone or in combination with fear, may be involved in the onset and maintenance of various animal (e.g., spiders, snakes, worms) and blood-injection-injury phobias.[16] Onset can also occur through indirect means, such as observing others reacting fearfully or receiving negative information.[15] However, a past event or specific reason for the onset of a phobia is not always possible to identify.

Some phobias (e.g., animal phobias) may arise solely due to the evolutionary threat relevance of their stimuli.[17] Familial concordance rates among first-degree biological relatives tend to be moderate. Heritability studies suggest that animal and blood-injection-injury phobias have the greatest heritability indices, of roughly 32% and 33%, respectively; however, there is limited research in this area.[18]

Pathophysiology

Amygdala, anterior cingulate cortex, and insula hyperactivity is believed to be the underlying mechanism of action. This theory is based on research noting significant reductions in site-specific neural activity in these areas following evidence-based exposure treatments.[19] Neuroimaging studies have also demonstrated increased amygdala activation upon exposure to phobic-relevant cues and heightened activity in the thalamic, insula, and dorsal anterior cingulate cortex regions.[19] [20] [21] [22] [23] Meta-analyses suggest that the left amygdala/globus pallidus, left insula, right thalamus, and cerebellum regions are all more active among phobics compared with non-phobic controls when exposed to phobic-relevant stimuli; exposure-based therapy leads to deactivation in the right frontal cortex, limbic cortex, basal ganglia, and cerebellum, with increased activity in the thalamus.[24] Reduced substance P-neurokinin 1 receptor availability during threat exposure (specific to the right amygdala) has been observed in a small, mixed sample of phobic patients.[25]

Functional neuroimaging studies have identified specific neural substrate patterns that differentiate phobic disorders from other anxiety disorders, including unique patterns of activation that discriminate among the various phobia subtypes.[26]

Acute, exaggerated parasympathetic nervous system activity upon exposure to stimuli is thought to underlie the vasovagal syncope that occurs in up to 80% of people with blood-injection-injury phobia.[27] [28]

Classification

Phobic stimuli[1]

Animal

- Most commonly dogs, snakes, and insects.

Situational

- Most commonly lifts, flying, and enclosed spaces (claustrophobia).

Natural environment

- Most commonly storms, heights, and water.

Blood-injection-injury

- Most commonly injections, blood draws, and medical procedures.

Other

- For example, choking, vomiting, and clowns.

Case history

Case history #1

A 40-year-old man experiences intense worry several weeks before scheduled airline travel. However, he is required to fly several times each year with his work. His fear developed 2 years ago following an extremely turbulent flight. He has recurring, vivid images of himself dying in a fiery crash while flying. He is hyperaware of any sound and unexpected movement of the plane.

Case history #2

A 25-year-old woman has increased physiological arousal when exposed to spiders and experiences intense fear when exposed to anything resembling spiders. Her symptoms have existed for as long as she can remember. She rarely ventures into the garage or attic and prior to going to bed each evening her husband must thoroughly inspect the bedroom. She admits she has never been bitten by a spider, is embarrassed about her reaction, and realises that spiders are not always dangerous; however, she is flooded by fearful thoughts that all spiders are aggressive and threatening.

THEORY

Other presentations

Phobias can develop to almost any object or situation. A common presentation in recent years is the patient who is hesitant to get vaccinated against coronavirus disease 2019 (COVID-19) due to a fear of needles.[2] Patients with diabetes mellitus who have fears of blood, needles, and/or injections may present as non-compliant with blood glucose monitoring and avoidant of scheduled blood draws. They may also present with lightheadedness, nausea, and/or fainting, as these symptoms are often associated with blood and injection phobias. Other medical phobias may include fears of being sedated or being trapped inside a scanner during imaging studies. Less common phobias include fears of choking, leading to significant changes in eating habits; irrational fears of touching plastic, leading to significant tactile aversion and avoidance behaviour; and fears of vomiting, leading to intense panic when nauseous or hearing others vomiting.

Approach

Diagnosis can be made through self-report, clinical interview, and behavioural observation of response to stimuli.[1] Several empirically validated self-report questionnaires are available to assess baseline functioning and to track response to treatment across time.[38]

Identification of pathophysiological markers through laboratory testing is not indicated.

Historical factors

Symptoms usually begin during mid- to late childhood; however, phobias can develop at any age. The median age of onset is 7 to 11 years, with declining probabilities of onset into later adulthood.[1] [3] [4] Most animal phobias develop before the age of 6 years, while situational phobias often develop in adolescence or early adulthood.[39]

Many patients do not recall specific events relating to the development of their phobias and often delay seeking treatment for several years after displaying marked avoidance behaviour. Descriptions of symptoms include experiences of intense anxiety or panic during anticipated or direct exposure to specific objects or situations. Sleep disruption, depression, and/or extreme anticipatory anxiety may co-occur. Up to 80% of patients with blood-injection-injury phobias experience vasovagal syncope.[27] Coping behaviours often include avoidance, safety seeking, or substance misuse. These behaviours may lead to phobia maintenance across time.

Social history often reveals functional impairments in personal, social, and occupational domains. Family history may reveal symptomatic first-degree relatives, particularly in patients with blood-injection-injury phobias who often describe familial vasovagal syncope. Medical histories are usually unremarkable.

Screening

Guidelines on screening for panic disorder vary according to country of practice. The US Preventive Services Task Force (USPSTF) recommends screening for anxiety disorders in all adults aged 19-64, including pregnant and postnatal people. The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for anxiety disorders in adults aged 65 and over.[40] The USPSTF also recommends universal screening in primary care for anxiety in children and adolescents aged 8-18 years.[41] The Women's Preventive Services Initiative in the US recommends that clinicians screen women and adolescent girls aged 13 years and over for anxiety (including those without a diagnosis of anxiety disorder and those who are pregnant or postnatal). Optimal screening intervals are unknown and clinical judgment is required to determine frequency.[42]

Ask the following set of questions to recognise phobic cues, symptoms, and behaviours:

- Do you feel intense anxiety or fear when confronted by certain animals, objects, or situations?
- Are you avoiding these animals, objects, or situations because of your fear?
- In what ways has this anxiety or fear interfered with your life?
- How would you react if you were exposed to the animal, object, or situation right now?
- Have you ever fainted or almost fainted around blood, injuries, or needles?

Diagnostic interview

Structured and semi-structured interview schedules are commonly used in the research setting but may not be necessary to make a diagnosis in clinical practice. Validated structured and semi-structured interview schedules to assess patients reporting phobic symptoms include:

- The Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 (SCID-5-CV)[43]
- The Anxiety Disorders Interview Schedule for DSM-5 (ADIS-5): Adult and Lifetime[44]
- The Anxiety Disorders Interview Schedule (ADIS-IV): Child and Parent.[45]

The ADIS-IV interview schedule is based upon DSM-IV criteria and consists of discrete semi-structured interviews for the child and the child's parent.

Interview with family and/or close friends

Assessments may be supplemented with interviews with family members or close supporters. This is particularly important when evaluating children with phobias.

Physical examination

There are usually no objective findings, although patients may become noticeably anxious or nervous when discussing their phobias. Signs of heightened sympathetic nervous system activity may be present (e.g., tachycardia, hyperventilation, sweating, flushing). Vasovagal fainting may also be present, especially when people with blood-injection-injury phobia are exposed to medical situations or procedures. The physician may wish to assess these patients for other medical conditions associated with fainting risk (including low blood glucose levels and orthostatic hypotension).

Behavioural approach tasks

Assessments using behavioural approach tasks involve observing the willingness of patients to come into direct proximity with phobic cues: for example, measuring how close a person with spider phobia would be willing to approach a sealed jar containing a live spider.

Children

Childhood fears are common and usually transient. Fears that persist are considered phobias if impairments in developmentally appropriate functioning are observed (e.g., refusing to play outdoors due to fears of dogs; refusing to turn lights off at bedtime due to fears of the dark). Phobic anxieties in children may be expressed by crying, tantrums, freezing, or clinging but children themselves may not recognise their fears as unreasonable. Parents describe either acute, traumatic onsets (e.g., dog bites) or gradual onsets in the absence of aversive experiences (e.g., fears of the dark).

History and exam

Key diagnostic factors

anticipatory anxiety (common)

- Anticipation of contact with phobic stimuli may be associated with catastrophic thoughts and fears of being unable to cope.

behavioural avoidance (common)

- Greater degrees of avoidance are typically associated with increased levels of functional impairment. Patients may endure situations with marked distress.

Other diagnostic factors

onset during childhood (common)

- The median range of onset for phobias is between 7 and 11 years.[1] [3] [4] Most animal phobias develop before the age of 6 years.[39]

onset during early adulthood (common)

- Situational phobias often arise in adolescence or early adulthood.

nausea (common)

- Nausea may be provoked upon exposure to certain phobic cues, especially those involving blood-injury.

dizziness (common)

- Dizziness may be experienced upon anticipated or actual exposure to phobic stimuli.

disgust (common)

- Disgust of objects or situations, either alone or in combination with fears, may be involved in the onset and maintenance of various animal and blood-injection-injury phobias.[16]

fainting (common)

- Up to 80% of people with blood-injection-injury phobias may have fainting episodes.[25]

tachycardia (common)

- Heart rate may be increased upon exposure or anticipated exposure to phobic cues. However, physiological response varies. While individuals with situational, natural environment, and animal-specific phobias are likely to show sympathetic nervous system arousal, those with blood-injection-injury phobias often demonstrate a vasovagal fainting response marked by an initial brief acceleration in heart rate and blood pressure, followed by deceleration in heart rate and drop in blood pressure.[46]

hyperventilation (common)

- Hyperventilation may occur upon exposure or anticipated exposure to phobic cues.

exaggerated startle (common)

- There may be exaggerated startles upon exposure or anticipated exposure to phobic cues.

sleep disruption (uncommon)

- Sleep disruption may develop due to high levels of anticipatory anxiety and worry: for example, anticipation of air travel.

Risk factors

Strong

somatisation disorder

- The onset of a phobia is >10 times more likely in an individual with a diagnosis of somatisation disorder than in a person with no other psychiatric disorder.[29]

anxiety disorders

- Individuals with another anxiety disorder, especially panic disorder, are at increased risk of developing a specific phobia.[3] [29]

mood disorders

- Individuals with depressive disorders or mania are at increased risk of developing a specific phobia.[3] [29] [30]

first-degree relative with phobia

- First-degree relatives of individuals with specific phobias are roughly 3.9 times more likely to develop a specific phobia than first-degree relatives of non-affected individuals.[31]

twin with phobia

- Monozygotic twin pairs are more likely to share a diagnosis of a specific phobia than dizygotic twin pairs, suggesting that genetics can contribute to symptom-onset vulnerability. Based on twin studies, blood-injection injury and animal phobias have been found to be the most heritable of the phobias, with heritability indices of roughly 33% and 32%, respectively.[32]

Weak

aversive experiences

- Onset of phobias can be precipitated by prior experiences with specific objects or situations. Direct and vicarious traumatic learning experiences are common.[15] At the same time, a majority of individuals with phobias of evolutionary-based threats (such as heights or spiders) do not recall negative or aversive experiences at the onset of their phobias.[17]

stress and negative life events

- Onset of phobias can be precipitated by negative or stressful life events such as relationship difficulties, relocations, and economic difficulties.[33]

female sex

- Phobias are approximately 2 to 3 times more common among women than men.

white ethnicity

- Phobias are more common among white people than among Hispanic and Asian people.

parental anxiety and overprotectiveness

- Parental anxiety and overprotective behaviours can play a role in the development and maintenance of anxiety disorders, and specific phobias in particular.[34]

negative affectivity and behavioural inhibition

- People with negative affectivity and behavioural inhibition are at higher risk for the development of specific phobias.[35] [36]

cognitive/attentional bias

- Increasing literature supports that attentional biases towards threat are associated with the development and maintenance of specific phobias.[37]

Investigations

1st test to order

Test	Result
self-report • Sufficient for establishing diagnosis.	**descriptions of intense anxiety/panic on contact with phobic stimuli**
behavioural observation and approach tests • Behavioural approach tasks may be used to measure how willing patients are to have contact with feared stimuli. • Sufficient for establishing diagnosis.	**intense anxiety and avoidance when discussing or approaching phobic stimuli**

Other tests to consider

Test	Result
structured/semi-structured clinical interview • Relevant interviews include: the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 (SCID-5-CV); the Anxiety Disorders Interview Schedule for DSM-5 (ADIS-5) Adult and Lifetime; and the Anxiety Disorders Interview Schedule (ADIS-IV) Child and Parent. • Sufficient for establishing diagnosis.	**fulfilment of DSM diagnostic criteria**

Differentials

Condition	Differentiating signs / symptoms	Differentiating tests
Agoraphobia	• Fear of situations in which escape is perceived to be difficult or help might not be available in the event of panic-like symptoms or other incapacitating or embarrassing symptoms (e.g., incontinence or vertigo).	• Structured clinical interview.
Panic disorder	• Recurrent, unexpected panic attacks with accompanying fear of additional panic attacks or their imagined consequences (e.g., heart attack, fainting, or loss of control). Patients usually avoid situations in which panic is perceived to be more likely (e.g., intense heat or physical exercise).	• Structured clinical interview.
Social anxiety disorder (social phobia)	• Fears involve concerns over being embarrassed and/or negatively evaluated by others. • The Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 introduced the alternate diagnostic label of social anxiety disorder to help reduce confusion over the use of the term 'phobia'.	• Structured clinical interview.
Post-traumatic stress disorder	• Onset follows exposure to a trauma. Fears involve stimuli associated with the trauma. Patients describe symptoms of re-experiencing (intrusive memories, nightmares, or flashbacks), avoidance of anything that reminds them of the trauma, and hyperarousal. Emotional numbing is common.	• Structured clinical interview.
Separation anxiety disorder	• Fears involve perceived separations from family members.	• Structured clinical interview.

Criteria

Diagnostic and Statistical Manual of Mental Disorders, fifth edition, text revisions (DSM-5-TR)[1]

Phobias can be diagnosed if the following American Psychiatric Association criteria are met:

- Marked and persistent fears that are cued by the presence or anticipation of specific objects or situations.
- Exposure to phobic stimuli almost invariably provokes immediate anxiety or fear responses. In children, anxieties may be expressed by crying, tantrums, freezing, or clinging.
- Phobic situations are avoided or endured with intense anxiety or fear.
- The fear or anxiety is out of proportion to the actual danger posed by the threatening object or situation, and to the sociocultural context.
- Avoidance, anxious anticipation and/or distress of feared situations interferes significantly with normal routines, occupations or academic functions, social activities, and/or relationships.
- Symptoms have been present for at least 6 months in both children and adults.
- Symptoms are not better accounted for by other mental disorders.

Subtypes are specified based on the following phobia categories.

- Animal: dogs, snakes, insects, etc.
- Situational: driving, flying, enclosed spaces, etc.
- Natural environment: storms, heights, dark, etc.
- Blood-injection-injury: injections, blood draws, medical procedures, etc.
- Other: choking, vomiting, clowns, etc.

International classification of diseases and related health problems, version 11: mental and behavioural disorders[47]

Specific (isolated) phobias can be diagnosed if the following World Health Organization criteria are met:

- Marked and excessive fear or anxiety occurs consistently upon exposure, or anticipation of exposure, to one or more specific objects or situations.
- Anxiety is out of proportion to actual danger.
- Phobic situations are avoided, or else endured with intense fear or anxiety.
- Symptoms persist for at least several months.
- Symptoms are sufficiently severe to result in significant distress or impairment in personal, family, social, educational, occupational, or other important areas of functioning.

Screening

Guidelines on screening for panic disorder vary according to country of practice. The US Preventive Services Task Force (USPSTF) recommends screening for anxiety disorders in all adults aged 19-64, including pregnant and postnatal people. The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for anxiety disorders in adults aged 65 and over.[40] The USPSTF also recommends universal screening in primary care for anxiety in children and adolescents aged 8-18 years.[41] The Women's Preventive Services Initiative in the US recommends that clinicians screen

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- Are you avoiding these animals, objects, or situations because of your fear?
- In what ways has this anxiety or fear interfered with your life?
- How would you react if you were exposed to the animal, object, or situation right now?

Approach

Cognitive behavioural therapy (CBT) is the first-line treatment approach for phobias.[48] [49] [50] [51] Short-term treatments usually suffice, and significant improvements are often attained in as little as one to five sessions.[48] [51] One-session treatments involving systematic exposure are effective for phobic children and adults.[52] [53] Primary goals are to reduce phobic anxiety, eliminate avoidance and safety behaviours, and improve functional capacities. When reviewing treatment options, it is important to consider patients' past treatments, their motivation, the presence of co-occurring disorders, the availability of treatments, and any barriers to care.

Cognitive behavioural therapy

First-line treatment for all patients with frequent symptoms is CBT, a skills-based intervention.[48] [49] [51] [54] [55] CBT has traditionally involved a combination of education, self-monitoring, cognitive interventions such as challenging negative styles of thinking, exposure to feared stimuli, and relaxation training. The efficacy of exposure therapy in particular is backed by a substantial body of research.[50] [56] [57] Studies have shown exposure therapy is effective for animal, situational, natural environment, blood-injection-injury, and atypical phobias.[58] [59] [60] [61] There is evidence that the efficacy of exposure therapy is reduced if it is combined with relaxation or the use of anxiety-reducing pharmacotherapy.[62]

Exposure therapy requires that phobic individuals voluntarily face feared stimuli without engaging in safety behaviours (e.g., distraction or reassurance-seeking). When a patient's response to phobic stimuli involves disgust, the treatment will be more effective if not only a fear response, but also a disgust response, is elicited during exposure.[62] This can be accomplished through direct exposure (in vivo exposure) to fear- and disgust-provoking stimuli such as pictures, video clips, or actual situations; by vividly imagining feared scenarios (imaginal exposure); or through the use of virtual reality.[63] Some types of specific phobia (e.g., claustrophobia, a situational phobia involving fear of enclosed spaces) are commonly associated with fears of certain physical sensations (e.g., shortness of breath). When fears of physical sensations are present, interoceptive exposure (i.e., direct exposure to particular physical sensations – by plugging the nose and breathing through a straw to cause shortness of breath, for example) may also be indicated.[64]

Exposure therapy was initially guided by Foa and Kozak's emotional processing theory, which posits that habituation to fearful distress within and between treatment sessions is necessary to the success of the treatment.[65] Clinicians therefore aimed to expose phobic individuals to feared stimuli in a gradual manner, allowing them to habituate to stimuli lower on their 'fear hierarchy' before moving up the hierarchy. They judged the optimal length of an individual exposure session to be the length of time required to achieve habituation within that session. However, some research suggests that habituation to anxious distress within and/or between treatment sessions is neither necessary nor sufficient for the efficacy of the treatment, and that variable exposure (i.e., not following a fear hierarchy) may actually have therapeutic advantages over graduated exposure (i.e., progressing up a fear hierarchy).[66] [67] [68]

Although exposure therapy for specific phobias is usually conducted over several sessions spanning several weeks, single-session exposure-based interventions lasting approximately 3 hours have also been effective and efficient in specific phobias in adults and children.[52] [53] [69] When available, these single-session treatments can be especially useful for managing phobias that must be overcome emergently (e.g., in time for a flight or medical procedure), although one study suggests they may be slightly less effective at follow-up than multiple-session treatments.[50]

Exposure therapy can be delivered through self-help materials, internet-assisted programmes, and/or referral to specialised mental health professionals.[56]

Virtual reality therapy has also been shown to be useful for treating a number of different phobias, especially height, flying, and dental phobias, although almost all studies have been performed in adults, and studies in children are limited.[70] [71] [72] [73] [74] [75] [76] Treatment of specific phobias with virtual reality therapy has the potential to save patients and clinicians time and money, compared with carrying out in vivo exposures (e.g., going on multiple plane flights), and is seen as a viable treatment option for phobic anxiety, when available.[77] [51] [63] [78] [79] [80] However, it may need to be supplemented with in vivo exposure therapy in certain cases, such as in spider or blood-injection-injury phobias, in order to achieve more robust results.[71] [81]

Applied tension therapy

For individuals who experience a blood-injection-injury phobia that is associated with fainting, applied tension therapy has traditionally been considered standard of care.[56] This treatment aims to address the second part of the biphasic physiological response that is typically observed in these individuals: an initial sympathetic response, with increased heart rate and blood pressure is followed shortly by a parasympathetic response, marked by an abrupt drop in blood pressure and heart rate.[82] The 'tension' part of the therapy involves repetitive, brief tensing (10-15 seconds) and releasing (20-30 seconds) of arm, abdominal, and leg muscle groups to promote increases in blood pressure and circulation that theoretically help avert the fainting response. Patients then learn to 'apply' tension at first signs of the parasympathetic response while undergoing exposures to fear-provoking stimuli (e.g., photographs or videos of needles or medical procedures or actual live medical procedures). Reviews of the evidence for applied tension therapy have cast doubt on its effectiveness above and beyond that of exposure therapy alone without applied tension.[83] [84] There is also research suggesting hyperventilation plays a critical role in the psychophysiological response of people with blood-injury-injection phobias who faint in response to relevant stimuli, and that breathing re-training could potentially prove a useful addition to the treatment of such individuals.[85] [86] Additional randomised trials are needed to assess the effectiveness of applied tension and breathing re-training both as individual treatments and when combined with each other and/or exposure therapy in people with blood-injection-injury phobias with and without a history of fainting.[83]

Pharmacotherapy

Short-term treatment with a benzodiazepine has been used for patients with infrequent symptoms that interfere with an important activity or urgent treatment (e.g., patients with needle phobia requiring chemotherapy, patients with claustrophobia requiring diagnostic imaging, or patients with flying phobias who need to fly for work or for an important family event); however, no studies have demonstrated efficacy of long-term treatment with benzodiazepines.

Benzodiazepines have been used as adjuncts to CBT in patients with extreme anticipatory anxiety; however, there is concern benzodiazepine use may interfere with the efficacy of exposure therapy.[87]

Other pharmacotherapeutic adjuncts to CBT include selective serotonin-reuptake inhibitors (SSRIs) for patients with concurrent depression or other anxiety disorders, such as panic disorder or generalised anxiety disorder. The use of SSRIs for specific phobias alone has not been systematically studied and is not common in clinical practice.

Self-help manuals

Self-help manuals based on CBT principles and self-guided exposure therapy have been found to be more effective than wait-list control conditions; however, written manuals may be less effective than internet-assisted treatments, which in turn may not be as effective as face-to-face CBT.[88] For this reason, a stepped-care approach is recommended.

There are few studies on the efficacy of self-help manuals for specific phobias, and those that have been conducted are heterogeneous, making meta-analysis challenging.[88] A self-help manual with evidence of efficacy is suggested.[89] Additional studies are needed.

Internet- or mobile-app-assisted treatments

Internet-assisted therapy can also deliver exposure-based treatments and is likely more effective than manual-assisted therapy.[88] [90] Meta-analysis generally supports the effectiveness of internet-assisted exposure interventions over wait-list control conditions.[91] [92] [93] [94] Mobile-app-supported treatments are a newer development, and initial studies support their effectiveness over wait-list control conditions also.[94] The available evidence suggests that therapist-assisted, internet- and mobile-based interventions are more likely to prove effective than interventions lacking therapist support, but this may change as these interventions are tested and refined to improve their efficacy.[94]

Other treatment modalities

Involving family members or friends in treatments may increase adherence with recommended interventions. Family involvement is particularly important when treating children. Although evidence suggests CBT for anxious children is effective both with and without active parental involvement, it appears active parental involvement is associated with better long-term maintenance of treatment gains.[95] [96]

Studies on the efficacy of group treatment for specific phobias are limited, but group interventions for spider, height, flying, and blood-injection phobias have been found to be effective in small studies.[97] [98] [99] [100]

Referral

Inform patients with specific phobias that effective treatments are available. If they are interested in pursuing treatment, they should be referred to experts in CBT and exposure therapy, in particular.[55] If a patient does not have access to a mental health professional with expertise in CBT or is not willing to see a mental health professional, recommend internet programmes emphasising self-directed exposure. If patients prefer bibliotherapy to internet treatment, offer an evidence-based manual.[89]

Children

First-line treatments for children are essentially the same as for adults and include one-session or multiple-session treatments with exposure therapy.[53] [101] Therefore, referral to mental health professionals who specialise in CBT – especially exposure therapy – for childhood anxiety disorders is recommended.

In young children, contingency management (rewarding children for approaching feared stimuli) is often used to increase motivation. Parental involvement is helpful for implementing contingency management, coaching at-home exposures, and reducing family accommodation of avoidance behaviours.[95] [102]

There is little research on the effectiveness of bibliotherapy or internet-assisted treatments in children with specific phobia. Limited data suggest these interventions are beneficial; however, further studies comparing them with therapist-directed exposure therapy are needed.[103] [104] Studies on the efficacy of group treatment for specific phobias are limited, but group interventions for spider, height, flying, and blood-injection phobias have been found to be effective in small studies.[97] [98] [99] [100] In children, group treatment for anxiety disorders, including specific phobias, have been found to be as effective as individual treatments.[105] [106] Group interventions are cost-effective and efficient ways to deliver treatment.

As in the adult literature, there are limited data regarding the efficacy of pharmacotherapy in the treatment of specific phobias in children and adolescents.

Treatment algorithm overview

Please note that formulations/routes and doses may differ between drug names and brands, drug formularies, or locations. Treatment recommendations are specific to patient groups: see disclaimer

Ongoing		(summary)
adults with subclinical symptoms and infrequent interference with usual activities		
	1st	**education and monitoring**
	adjunct	**cognitive behavioural therapy with exposure therapy**
■ **concurrent vasovagal syncope**	**plus**	**applied tension**
adults with frequent symptoms interfering with usual activities		
	1st	**cognitive behavioural therapy with exposure therapy**
	2nd	**benzodiazepine**
■ **concurrent vasovagal syncope**	**plus**	**applied tension**
children with ongoing symptoms interfering with usual activities		
	1st	**cognitive behavioural therapy**

Treatment algorithm

Please note that formulations/routes and doses may differ between drug names and brands, drug formularies, or locations. Treatment recommendations are specific to patient groups: see disclaimer

Ongoing

adults with subclinical symptoms and infrequent interference with usual activities

1st **education and monitoring**

» Advise patients that fear is an inevitable and normal part of life, but that avoidance behaviours can feed a particular fear to the point it interferes with everyday life and becomes a phobic disorder.

» Encourage patients to face their fears, rather than avoid them.

» Meta-analysis generally supports the effectiveness of internet-assisted exposure interventions over wait-list control conditions.[91] [92] [93] [94] Mobile-app-supported treatments are a newer development, and initial studies support their effectiveness over wait-list control conditions also.[94] The available evidence suggests that therapist-assisted, internet- and mobile-based interventions are more likely to prove effective than interventions lacking therapist support, but this may change as these interventions are tested and refined to improve their efficacy.[94]

» Make patients aware of self-help manuals or internet-based resources, such as those available from the NHS, MIND, and Living Life to the Full. [NHS: self-help therapies] (https://www.nhs.uk/mental-health/talking-therapies-medicine-treatments/talking-therapies-and-counselling/self-help-therapies) [MIND: self-care tips for phobias] (https://www.mind.org.uk/information-support/types-of-mental-health-problems/phobias/self-care) [LLttF: courses to tackle low mood and stress] (https://llttf.com/resources)

» Additionally, set up a return visit or a phone call to monitor progress.

adjunct **cognitive behavioural therapy with exposure therapy**

Treatment recommended for SOME patients in selected patient group

» This intervention involves education about the behaviours that maintain a phobia (namely,

Ongoing

avoidance and safety behaviours); self-monitoring; and repeated, frequent, controllable, and predictable exposures to feared objects or situations in the form of words, pictures, videos, virtual reality, actual situations, imagined scenarios, or physical sensations.

» There is evidence that the efficacy of exposure therapy is reduced if it is combined with relaxation or the use of anxiety-reducing pharmacotherapy.[62]

» Exposure therapy requires that phobic individuals voluntarily face feared stimuli without engaging in safety behaviours (e.g., distraction or reassurance-seeking). When a patient's response to phobic stimuli involves disgust, the treatment will be more effective if not only a fear response, but also a disgust response, is elicited during exposure.[62]

» A single-session intervention can be effective and can be delivered by appropriately trained mental health professionals; through self-help manuals; or through internet-assisted treatment programmes.

» Treatment of specific phobias with virtual reality therapy has the potential to save patients and clinicians time and money, compared with carrying out in-vivo exposures (e.g., going on multiple plane flights), and is seen as a viable treatment option for phobic anxiety, when available.[77] [51] [63] [78] [79] [80] However, it may need to be supplemented with in-vivo exposure therapy in certain cases, such as in spider or blood-injection-injury phobias, in order to achieve more robust results.[71] [81]

concurrent vasovagal syncope **plus** **applied tension**

Treatment recommended for ALL patients in selected patient group

» Suitable for patients with vasovagal fainting upon exposure to blood-injection-injury stimuli.

» Involves repeated tensing and releasing of large muscle groups to increase blood pressure and promote circulation during exposure to feared stimuli (e.g., blood, needles, hospitals).

» Patients learn to apply this procedure at the first signs of fainting.

» Refer to mental health professionals with expertise in cognitive behavioural therapy for blood-injection-injury phobia.

Ongoing

adults with frequent symptoms interfering with usual activities

1st **cognitive behavioural therapy with exposure therapy**

» This intervention involves education about the behaviours that maintain a phobia (namely, avoidance and safety behaviours); self-monitoring; and repeated, frequent, controllable, and predictable exposures to feared objects or situations in the form of words, pictures, videos, virtual reality, actual situations, imagined scenarios, or physical sensations.

» There is evidence that the efficacy of exposure therapy is reduced if it is combined with relaxation or the use of anxiety-reducing pharmacotherapy.[62]

» Exposure therapy requires that phobic individuals voluntarily face feared stimuli without engaging in safety behaviours (e.g., distraction or reassurance-seeking). When a patient's response to phobic stimuli involves disgust, the treatment will be more effective if not only a fear response, but also a disgust response, is elicited during exposure.[62]

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2nd **benzodiazepine**

Primary options

» alprazolam: 0.25 to 0.5 mg orally (immediate-release) every 6-8 hours until the short-term stressor has passed

OR

Ongoing

» clonazepam: 0.25 to 0.5 mg orally every 8-12 hours until the short-term stressor has passed

OR

» lorazepam: 1-2 mg orally every 8-12 hours until the short-term stressor has passed

OR

» diazepam: 2-10 mg orally two to four times daily until the short-term stressor has passed

» Consider short-term use in emergent circumstances, including needle phobias interfering with chemotherapy; claustrophobia interfering with diagnostic imaging; and travel phobias interfering with occupations or important family events.

» May negatively impact the efficacy of graduated exposure therapy. While these medications are indicated for anxiety, there are no studies focused exclusively on patients with specific phobia that show efficacy in these patients.

» Caution is warranted with long-term use, given risks of dependence, withdrawal, and interference with exposure therapy.

» Specialist referral may be indicated.

concurrent vasovagal syncope — **plus** — **applied tension**

Treatment recommended for ALL patients in selected patient group

» Suitable for patients with vasovagal fainting upon exposure to blood-injection-injury stimuli.

» Involves repeated tensing and releasing of large muscle groups to increase blood pressure and promote circulation during exposure to feared stimuli (e.g., blood, needles, hospitals). Patients learn to apply this procedure at the first signs of fainting.

» Refer to mental health professionals with expertise in cognitive behavioural therapy for blood-injection-injury phobia.

children with ongoing symptoms interfering with usual activities

1st — **cognitive behavioural therapy**

MANAGEMENT

Ongoing

» This intervention involves education about the behaviours that maintain a phobia (namely, avoidance and safety behaviours); self-monitoring; and repeated, frequent, controllable, and predictable exposures to feared objects or situations in the form of words, pictures, videos, virtual reality, actual situations, imagined scenarios, or physical sensations.

» In young children, contingency management (rewarding children for approaching feared stimuli) is often used to increase motivation.

» Parental involvement is helpful for implementing contingency management, coaching at-home exposures, and reducing family accommodation of avoidance behaviours.

» A single-session intervention can be effective. Treatment should be delivered by pediatric mental health professionals who are trained in exposure therapy.

» Treatment of specific phobias with virtual reality therapy has the potential to save patients and clinicians time and money, compared with carrying out in-vivo exposures (e.g., going on multiple plane flights), and is seen as a viable treatment option for phobic anxiety, when available.[77] [51] [63] [78] [79] [80] However, it may need to be supplemented with in-vivo exposure therapy in certain cases, such as in spider or blood-injection-injury phobias, in order to achieve more robust results.[71] [81]

» In children, group treatment for anxiety disorders, including specific phobias, have been found to be as effective as individual treatments.[105] [106] Group interventions are cost-effective and efficient ways to deliver treatment.

» There are limited data regarding the efficacy of pharmacotherapy in treating specific phobias in children and adolescents.

Emerging

D-cycloserine

D-cycloserine is a partial N-methyl-D-aspartate agonist shown in several small studies to enhance exposure-based treatments when used in low doses just before or just after a session of exposure, purportedly by facilitating memory consolidation.[107] [108] Other similar studies have found either detriment or lack of benefit from the treatment. In one study, the medication was detrimental if administered when fear levels remained elevated after an exposure, while it was beneficial if administered when fear levels had fallen after an exposure.[109] One 2015 Cochrane review found no evidence for a difference between D-cycloserine and placebo administration during exposure therapy, while a 2017 review and meta-analysis of individual participant data concluded D-cycloserine administration was associated with a small augmentation effect on exposure therapy.[110] [111] Research is needed to clarify mechanisms of action and determine whether there are particular conditions under which D-cycloserine administration might prove reliably beneficial.

Glucocorticoids

Glucocorticoids are thought to enhance fear extinction and reduce fear memory retrieval.[112] Several small placebo-controlled studies on individuals with phobias to spiders and heights found that administration of cortisol 1 hour prior to exposure therapy resulted in superior outcomes in those individuals who received cortisol versus placebo.[113] [114] Glucocorticoid administration in conjunction with exposure therapy for other disorders, such as post-traumatic stress disorder, has also been found to be beneficial.[112] More studies are warranted to determine whether these findings are reproducible and to calculate the optimal timing and dosing of glucocorticoid administration.

Patient discussions

It is important to normalise distress and evaluate the extent to which anxiety and avoidance behaviours are interfering with everyday life. It can also be useful to inform patients about evidence-based treatment options and discuss any apprehensions about treatments or referral.

Monitoring

Monitoring

Indefinite long-term monitoring in primary care settings is important as phobic fears and avoidance behaviours may return at any time. Self-directed booster exposure sessions or re-referrals for brief cognitive behavioural therapy may be warranted. The American Psychiatric Association offers self-rated Disorder-Specific Severity Measures for clinically diagnosed specific phobia. [APA: DSM-5-TR online assessment measures] (https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures) Both adult and child versions of these measures are available, and they can be useful tools for tracking the severity of patients' symptoms over time, both to assess treatment efficacy and to identify relapses.

FOLLOW UP

Complications

Complications	Timeframe	Likelihood
anxiety disorder	**variable**	**medium**
Anxiety disorders may predate, co-occur with, or postdate the onset of phobias. While patients may present for treatment of specific phobia, it may be necessary to consider treatment of other anxiety disorders. Comorbid anxiety disorders are amenable to cognitive behavioural therapy. Mild to moderate comorbid anxiety disorders can be treated with evidence-based pharmacotherapy. Consultant referrals are warranted for more severe levels of anxiety.		
depression	**variable**	**medium**
Depressive disorders may predate, co-occur with, or postdate the onset of phobias. Depressive symptoms may interfere with the patient's ability to engage in exposure therapy. Cognitive behavioural therapy and interpersonal psychotherapy are evidence-based treatments for comorbid depressive disorders. Moderate to severe levels of depression can be treated with evidence-based pharmacotherapy. Consultant referrals are warranted for more severe levels of depression.		
non-compliance with medical regimens	**variable**	**medium**
Phobic responses may interfere with necessary medical treatments. For example, patients with blood-injection-injury phobias are at higher risk of non-compliance with diabetic treatment regimens.[120] It is important to take patients' concerns and preferences seriously as well as to provide information about evidence-based treatment options (i.e., different forms of exposure therapy).		
apprehension of/stigma towards mental health referrals	**variable**	**medium**
It is important to listen carefully to patients' concerns and take them seriously. Address each concern individually and provide corrective information when appropriate. Motivational techniques are often helpful when patients are ambivalent. Consult local-area mental health professionals for additional advice or referral options. Recommend self-help books or internet programmes to patients who refuse referrals to mental health providers. Patients may benefit from internet-based education materials, such as those available from the NHS, MIND, and Living Life to the Full. [NHS: self-help therapies] (https://www.nhs.uk/mental-health/talking-therapies-medicine-treatments/talking-therapies-and-counselling/self-help-therapies) [MIND: self-care tips for phobias] (https://www.mind.org.uk/information-support/types-of-mental-health-problems/phobias/self-care) [LLttF: courses to tackle low mood and stress] (https://llttf.com/resources)		

Complications	Timeframe	Likelihood
resistance to exposure therapy	**variable**	**medium**

It is important to listen carefully to patients' concerns and take them seriously. Address each concern individually and provide corrective information when appropriate. Motivational techniques are often helpful when patients are ambivalent.

Consult local-area mental health professionals for additional advice or referral options.

Recommend self-help books or internet programmes to patients who refuse referrals to mental health providers.

Patients may benefit from internet-based education materials, such as those available from the NHS, MIND, and Living Life to the Full. [NHS: self-help therapies] (https://www.nhs.uk/mental-health/talking-therapies-medicine-treatments/talking-therapies-and-counselling/self-help-therapies) [MIND: self-care tips for phobias] (https://www.mind.org.uk/information-support/types-of-mental-health-problems/phobias/self-care) [LLttF: courses to tackle low mood and stress] (https://llttf.com/resources)

Prognosis

Longitudinal studies have shown that specific phobias have a variable course, with relative exacerbations and improvements in symptoms over time. These studies have found that persistence of specific phobia diagnosis was roughly 20% at 1- to 12-year follow-up (range 6% to 38%).[3] [115] [116] [117] Up to 90% of patients reach clinically significant levels of improvement after treatment with exposure therapy.[118] [119] Most treatment gains are maintained after 1 year of treatment; however, further research is required to determine longer-term outcomes.[56] The probability of relapse is most likely reduced by scheduling periodic 'booster' sessions with a therapist and through continued practice of self-directed exposures.

Diagnostic guidelines

North America

Clinical practice guideline for the assessment#and treatment of children and adolescents with anxiety disorders (https://www.aacap.org/AACAP/Resources_for_Primary_Care/Practice_Parameters_and_Resource_Centers/Practice_Parameters.aspx)

Published by: American Academy of Child & Adolescent Psychiatry **Last published:** 2020

Treatment guidelines

United Kingdom

Generalised anxiety disorder and panic disorder in adults: management (https://www.nice.org.uk/guidance/CG113)

Published by: National Institute for Health and Care Excellence **Last published:** 2020

Evidence-based pharmacological treatment of anxiety disorders, post-traumatic stress disorder and obsessive-compulsive disorder (http://www.bap.org.uk/docsbycategory.php?docCatID=2)

Published by: British Association for Psychopharmacology **Last published:** 2014

North America

Clinical practice guideline for the assessment#and treatment of children and adolescents with anxiety disorders (https://www.aacap.org/AACAP/Resources_for_Primary_Care/Practice_Parameters_and_Resource_Centers/Practice_Parameters.aspx)

Published by: American Academy of Child & Adolescent Psychiatry **Last published:** 2020

Exposure-based interventions for the management of individuals with high levels of needle fear across the lifespan: a clinical practice guideline and call for further research (https://phm.utoronto.ca/helpinkids/publications1.html)

Published by: Help Eliminate Pain in Kids & Adults **Last published:** 2016

Canadian clinical practice guidelines for the management of anxiety, posttraumatic stress, and obsessive compulsive disorders (https://bmcpsychiatry.biomedcentral.com/articles)

Published by: Anxiety Disorders Association of Canada; McGill University **Last published:** 2014

Online resources

1. NHS: self-help therapies (https://www.nhs.uk/mental-health/talking-therapies-medicine-treatments/talking-therapies-and-counselling/self-help-therapies) *(external link)*

2. MIND: self-care tips for phobias (https://www.mind.org.uk/information-support/types-of-mental-health-problems/phobias/self-care) *(external link)*

3. LLttF: courses to tackle low mood and stress (https://llttf.com/resources) *(external link)*

4. APA: DSM-5-TR online assessment measures (https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures) *(external link)*

REFERENCES

Key articles

- American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 5th ed., text revision (DSM-5-TR). Washington, DC: American Psychiatric Publishing; 2022.
- Stinson FS, Dawson DA, Chou SP, et al. The epidemiology of DSM-IV specific phobia in the USA: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Psychol Med. 2007 Jul;37(7):1047-59. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/17335637?tool=bestpractice.bmj.com)
- Wolitzky-Taylor KB, Horowitz JD, Powers MB, et al. Psychological approaches in the treatment of specific phobias: a meta-analysis. Clin Psychol Rev. 2008 Jul;28(6):1021-37. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/18410984?tool=bestpractice.bmj.com)
- Katzman MA, Bleau P, Blier P, et al; Anxiety Disorders Association of Canada; McGill University. Canadian clinical practice guidelines for the management of anxiety, posttraumatic stress and obsessive-compulsive disorders. BMC Psychiatry. 2014;14 Suppl 1:S1. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4120194) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/25081580?tool=bestpractice.bmj.com)
- National Institute for Health and Care Excellence. Generalised anxiety disorder and panic disorder in adults: management. Clinical guideline [CG113]. June 2020 [internet publication]. Full text (https://www.nice.org.uk/guidance/cg113)
- McMurtry CM, Taddio A, Noel M, et al. Exposure-based interventions for the management of individuals with high levels of needle fear across the lifespan: a clinical practice guideline and call for further research. Cogn Behav Ther. 2016 Apr;45(3):217-35. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4867871) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/27007463?tool=bestpractice.bmj.com)
- Grös DF, Antony MM. The assessment and treatment of specific phobias: a review. Curr Psychiatry Rep. 2006 Aug;8(4):298-303. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/16879794?tool=bestpractice.bmj.com)
- Antony MM, Barlow DH. Specific phobias. In: Barlow DH, ed. Anxiety and its disorders: the nature and treatment of anxiety and panic. 2nd ed. New York, NY: Guilford Press; 2002:380-417.

References

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 5th ed., text revision (DSM-5-TR). Washington, DC: American Psychiatric Publishing; 2022.
2. Freeman D, Lambe S, Yu LM, et al. Injection fears and COVID-19 vaccine hesitancy. Psychol Med. 2021 Jun 11;:1-11. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8220023) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/34112276?tool=bestpractice.bmj.com)

3. Stinson FS, Dawson DA, Chou SP, et al. The epidemiology of DSM-IV specific phobia in the USA: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Psychol Med. 2007 Jul;37(7):1047-59. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/17335637?tool=bestpractice.bmj.com)

4. Kessler RC, Berglund P, Demler O, et al. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry. 2005 Jun;62(6):593-602. Full text (http://jamanetwork.com/journals/jamapsychiatry/fullarticle/208678) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/15939837?tool=bestpractice.bmj.com)

5. Kessler RC, Chiu WT, Demler O, et al. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry. 2005 Jun;62(6):617-27. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2847357) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/15939839?tool=bestpractice.bmj.com)

6. Kim SJ, Kim BN, Cho SC, et al. The prevalence of specific phobia and associated co-morbid features in children and adolescents. J Anxiety Disord. 2010 Aug;24(6):629-34. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/20439148?tool=bestpractice.bmj.com)

7. Ollendick TH, King NJ, Muris P. Fears and phobias in children: phenomenology, epidemiology and aetiology. Child Adolesc Ment Health. 2002;7(3):98-106.

8. Kessler RC, Petukhova M, Sampson NA, et al. Twelve-month and lifetime prevalence and lifetime morbid risk of anxiety and mood disorders in the United States. Int J Methods Psychiatr Res. 2012 Sep;21(3):169-84. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4005415) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/22865617?tool=bestpractice.bmj.com)

9. Greiner S, Schuurmans J, Goldfarb M, et al. The epidemiology of specific phobia and subthreshold fear subtypes in a community-based sample of older adults. Depress Anxiety. 2011 Jun;28(6):456-63. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/21400642?tool=bestpractice.bmj.com)

10. Collaborating Centre for Mental Health World Health Organisation. WHO Guide to Mental and Neurological Health in Primary Care. Prevalence of mental disorders in men and women. 2nd edition. London:Royal Society of Medicine Press Ltd;2004.

11. Wardenaar KJ, Lim CCW, Al-Hamzawi AO, et al. The cross-national epidemiology of specific phobia in the World Mental Health Surveys. Psychol Med. 2017 Jul;47(10):1744-60. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5674525) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/28222820?tool=bestpractice.bmj.com)

12. Arrindell WA, Eisemann M, Richter J, et al. Phobic anxiety in 11 nations. Part 1: dimensional constancy of the five-factor model. Behav Res Ther. 2003 Apr;41(4):461-79. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/12643968?tool=bestpractice.bmj.com)

13. Pull CB. Recent trends in the study of specific phobias. Curr Opin Psychiatry. 2008 Jan;21(1):43-50. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/18281840?tool=bestpractice.bmj.com)

REFERENCES

14. Davey GC, McDonald AS, Hirisave U, et al. A cross-cultural study of animal fears. Behav Res Ther. 1998 Jul-Aug;36(7-8):735-50. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/9682528?tool=bestpractice.bmj.com)

15. Rachman S. The conditioning theory of fear-acquisition: a critical examination. Behav Res Ther. 1977;15(5):375-87. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/612338?tool=bestpractice.bmj.com)

16. Olatunji BO, Sawchuk CN. Disgust: characteristic features, social manifestations, and clinical implications. J Soc Clin Psychol. 2005;24(7):932-62.

17. Poulton R, Menzies RG. Non-associative fear acquisition: a review of the evidence from retrospective and longitudinal research. Behav Res Ther. 2002 Feb;40(2):127-49. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/11814178?tool=bestpractice.bmj.com)

18. Van Houtem CM, Laine ML, Boomsma DI, et al. A review and meta-analysis of the heritability of specific phobia subtypes and corresponding fears. J Anxiety Disord. 2013 May;27(4):379-88. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/23774007?tool=bestpractice.bmj.com)

19. Goossens L, Sunaert S, Peeters R, et al. Amygdala hyperfunction in phobic fear normalizes after exposure. Biol Psychiatry. 2007 Nov 15;62(10):1119-25. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/17706612?tool=bestpractice.bmj.com)

20. Straube T, Mentzel HJ, Miltner WH. Neural mechanisms of automatic and direct processing of phobogenic stimuli in specific phobia. Biol Psychiatry. 2006 Jan 15;59(2):162-70. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/16139812?tool=bestpractice.bmj.com)

21. Schienle A, Schafer A, Walter B, et al. Brain activation of spider phobics towards disorder-relevant, generally disgust- and fear-inducing pictures. Neurosci Lett. 2005 Nov 4;388(1):1-6. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/16046064?tool=bestpractice.bmj.com)

22. Straube T, Mentzel HJ, Miltner WH. Waiting for spiders: brain activation during anticipatory anxiety in spider phobics. Neuroimage. 2007 Oct 1;37(4):1427-36. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/17681799?tool=bestpractice.bmj.com)

23. Damsa C, Kosel M, Moussally J, et al. Current status of brain imaging in anxiety disorders. Curr Opin Psychiatry. 2009 Jan;22(1):96-110. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/19122541?tool=bestpractice.bmj.com)

24. Ipser JC, Singh L, Stein DJ. Meta-analysis of functional brain imaging in specific phobia. Psychiatry Clin Neurosci. 2013 Jul;67(5):311-22. Full text (https://onlinelibrary.wiley.com/doi/full/10.1111/pcn.12055) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/23711114?tool=bestpractice.bmj.com)

25. Michelgard A, Appel L, Pissiota A, et al. Symptom provocation in specific phobia affects substance P neurokinin-1 receptor system. Biol Psychiatry. 2007 Apr 15;61(8):1002-6. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/16950220?tool=bestpractice.bmj.com)

26. Del Casale A, Ferracuti S, Rapinesi C, et al. Functional neuroimaging in specific phobia. Psychiatry Res. 2012 Jun 30;202(3):181-97. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/22804970?tool=bestpractice.bmj.com)

27. Ost LG. Blood and injection phobia: background and cognitive, physiological, and behavioral variables. J Abnorm Psychol. 1992 Feb;101(1):68-74. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/1537975?tool=bestpractice.bmj.com)

28. Page AC. The role of disgust in faintness elicited by blood and injection stimuli. J Anxiety Disord. 2003;17(1):45-58. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/12464288?tool=bestpractice.bmj.com)

29. Boyd JH, Rae DS, Thompson JW, et al. Phobia: prevalence and risk factors. Soc Psychiatry Psychiatr Epidemiol. 1990 Nov;25(6):314-23. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/2291135?tool=bestpractice.bmj.com)

30. Jacobson NC, Newman MG. Anxiety and depression as bidirectional risk factors for one another: a meta-analysis of longitudinal studies. Psychol Bull. 2017 Nov;143(11):1155-200. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/28805400?tool=bestpractice.bmj.com)

31. Fyer AJ, Mannuzza S, Chapman TF, et al. Specificity in familial aggregation of phobic disorders. Arch Gen Psychiatry. 1995 Jul;52(7):564-73. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/7598633?tool=bestpractice.bmj.com)

32. Czajkowski N, Kendler KS, Tambs K, et al. The structure of genetic and environmental risk factors for phobias in women. Psychol Med. 2011 Sep;41(9):1987-95. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3143273) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/21211096?tool=bestpractice.bmj.com)

33. Poulton R, Waldie KE, Craske MG, et al. Dishabituation processes in height fear and dental fear: an indirect test of the non-associative model of fear acquisition. Behav Res Ther. 2000 Sep;38(9):909-19. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/10957825?tool=bestpractice.bmj.com)

34. Breinholst S, Esbjorn BH, Reinholdt-Dunne ML, et al. CBT for the treatment of child anxiety disorders: a review of why parental involvement has not enhanced outcomes. J Anxiety Disord. 2012 Apr;26(3):416-24. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/22306129?tool=bestpractice.bmj.com)

35. Ollendick TH, Muris P. The scientific legacy of Little Hans and Little Albert: future directions for research on specific phobias in youth. J Clin Child Adolesc Psychol. 2015;44(4):689-706. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/25864566?tool=bestpractice.bmj.com)

36. Beesdo K, Knappe S, Pine DS. Anxiety and anxiety disorders in children and adolescents: developmental issues and implications for DSM-V. Psychiatr Clin North Am. 2009 Sep;32(3):483-524. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3018839) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/19716988?tool=bestpractice.bmj.com)

37. Cisler JM, Koster EH. Mechanisms of attentional biases towards threat in anxiety disorders: an integrative review. Clin Psychol Rev. 2010 Mar;30(2):203-16. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2814889) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/20005616?tool=bestpractice.bmj.com)

38. Antony MM, Orsillo SM, Roemer L. Practitioner's guide to empirically based measures of anxiety. New York, Springer Publishing; 2001.

39. Becker ES, Rinck M, Türke V, et al. Epidemiology of specific phobia subtypes: findings from the Dresden Mental Health Study. Eur Psychiatry. 2006 Mar;22(2):69-74. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/17157482?tool=bestpractice.bmj.com)

40. US Preventive Services Task Force. Screening for anxiety disorders in adults: US Preventive Services Task Force recommendation statement. JAMA. 2023 Jun 27;329(24):2163-70. Full text (https://jamanetwork.com/journals/jama/fullarticle/2806250) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/37338866?tool=bestpractice.bmj.com)

41. US Preventive Services Task Force. Anxiety in children and adolescents: screening. Oct 2022 [internet publication]. Full text (https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/screening-anxiety-children-adolescents)

42. Gregory KD, Chelmow D, Nelson HD, et al. Screening for anxiety in adolescent and adult women: a recommendation from the Women's Preventive Services Initiative. Ann Intern Med. 2020 Jul 7;173(1):48-56. Full text (https://www.acpjournals.org/doi/10.7326/M20-0580) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/32510990?tool=bestpractice.bmj.com)

43. First MB, Williams JBW, Karg RS, Spitzer RL. Structured clinical interview for DSM-5 disorders, clinician version (SCID-5-CV). Arlington, VA: American Psychiatric Association; 2015.

44. Brown TA, Barlow DH. Anxiety disorders interview schedule for DSM-5 (ADIS-5) - adult version. Oxford: Oxford University Press; 2014.

45. Albano AM, Silverman WK. Anxiety disorders interview schedule for DSM-IV, child/parent version. Albany, NY: Graywind Publications; 1996.

46. LeBeau RT, Glenn D, Liao B, et al. Specific phobia: a review of DSM-IV specific phobia and proposals for DSM-V. Depress Anxiety. 2010 Feb;27(2):148-67. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/20099272?tool=bestpractice.bmj.com)

47. World Health Organization. ICD-11 International statistical classification of diseases and related health problems, 11th revision. Geneva: WHO; 2022. Full text (https://icd.who.int/en)

48. Grös DF, Antony MM. The assessment and treatment of specific phobias: a review. Curr Psychiatry Rep. 2006 Aug;8(4):298-303. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/16879794?tool=bestpractice.bmj.com)

49. Antony MM, Barlow DH. Specific phobias. In: Barlow DH, ed. Anxiety and its disorders: the nature and treatment of anxiety and panic. 2nd ed. New York, NY: Guilford Press; 2002:380-417.

50. Wolitzky-Taylor KB, Horowitz JD, Powers MB, et al. Psychological approaches in the treatment of specific phobias: a meta-analysis. Clin Psychol Rev. 2008 Jul;28(6):1021-37. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/18410984?tool=bestpractice.bmj.com)

51. Katzman MA, Bleau P, Blier P, et al; Anxiety Disorders Association of Canada; McGill University. Canadian clinical practice guidelines for the management of anxiety, posttraumatic stress

and obsessive-compulsive disorders. BMC Psychiatry. 2014;14 Suppl 1:S1. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4120194) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/25081580?tool=bestpractice.bmj.com)

52. Zlomke K, Davis TE. One-session treatment of specific phobias: a detailed description and review of treatment efficacy. Behav Ther. 2008 Sep;39(3):207-23. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/18721635?tool=bestpractice.bmj.com)

53. Davis TE 3rd, Ollendick TH. Intensive treatment of specific phobias in children and adolescents. Cogn Behav Pract. 2009 Aug 1;16(3):294-303. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/20161063?tool=bestpractice.bmj.com)

54. Pompoli A, Furukawa TA, Imai H, et al. Psychological therapies for panic disorder with or without agoraphobia in adults: a network meta-analysis. Cochrane Database Syst Rev. 2016 Apr 13;(4):CD011004. Full text (https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011004.pub2/full) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/27071857?tool=bestpractice.bmj.com)

55. National Institute for Health and Care Excellence. Generalised anxiety disorder and panic disorder in adults: management. Clinical guideline [CG113]. June 2020 [internet publication]. Full text (https://www.nice.org.uk/guidance/cg113)

56. Choy Y, Fyer AJ, Lipsitz JD. Treatment of specific phobia in adults. Clin Psychol Rev. 2007 Apr;27(3):266-86. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/17112646?tool=bestpractice.bmj.com)

57. Eaton WW, Bienvenu OJ, Miloyan B. Specific phobias. Lancet Psychiatry. 2018 Aug;5(8):678-86. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/30060873?tool=bestpractice.bmj.com)

58. Gilroy L, Kirkby KC, Daniels BA, et al. Controlled comparison of computer-aided vicarious exposure versus live exposure in the treatment of spider phobia. Behav Ther. 2000;31:733-44.

59. Menzies RG, Clarke JC. A comparison of in vivo and vicarious exposure in the treatment of childhood water phobia. Behav Res Ther. 1993 Jan;31(1):9-15. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/8093340?tool=bestpractice.bmj.com)

60. Oar EL, Farrell LJ, Ollendick TH. One session treatment for specific phobias: an adaptation for paediatric blood-injection-injury phobia in youth. Clin Child Fam Psychol Rev. 2015 Dec;18(4):370-94. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/26374227?tool=bestpractice.bmj.com)

61. Riddle-Walker L, Veale D, Chapman C, et al. Cognitive behaviour therapy for specific phobia of vomiting (Emetophobia): A pilot randomized controlled trial. J Anxiety Disord. 2016 Oct;43:14-22. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/27472452?tool=bestpractice.bmj.com)

62. Böhnlein J, Altegoer L, Muck NK, et al. Factors influencing the success of exposure therapy for specific phobia: A systematic review. Neurosci Biobehav Rev. 2020 Jan;108:796-820. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/31830494?tool=bestpractice.bmj.com)

63. Carl E, Stein AT, Levihn-Coon A, et al. Virtual reality exposure therapy for anxiety and related disorders: a meta-analysis of randomized controlled trials. J Anxiety Disord. 2019 Jan;61:27-36. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/30287083?tool=bestpractice.bmj.com)

64. Boettcher H, Barlow DH. The unique and conditional effects of interoceptive exposure in the treatment of anxiety: A functional analysis. Behav Res Ther. 2018 Dec 6 [Epub ahead of print]. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/30579624?tool=bestpractice.bmj.com)

65. Foa EB, Kozak MJ. Emotional processing of fear: exposure to corrective information. Psychol Bull. 1986 Jan;99(1):20-35. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/2871574?tool=bestpractice.bmj.com)

66. Craske MG, Treanor M, Conway CC, et al. Maximizing exposure therapy: an inhibitory learning approach. Behav Res Ther. 2014 Jul;58:10-23. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4114726) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/24864005?tool=bestpractice.bmj.com)

67. Kircanski K, Mortazavi A, Castriotta N, et al. Challenges to the traditional exposure paradigm: variability in exposure therapy for contamination fears. J Behav Ther Exp Psychiatry. 2012 Jun;43(2):745-51. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/22104655?tool=bestpractice.bmj.com)

68. Baker A, Mystkowski J, Culver N, et al. Does habituation matter? Emotional processing theory and exposure therapy for acrophobia. Behav Res Ther. 2010 Nov;48(11):1139-43. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2956764) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/20723886?tool=bestpractice.bmj.com)

69. Davis TE, Ollendick TH, Öst LG. One-session treatment of phobias in children: recent developments and a systematic review. Annu Rev Clin Psychol. 2018 Dec 14 [Epub ahead of print]. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/30550722?tool=bestpractice.bmj.com)

70. Kothgassner OD, Felnhofer A. Lack of research on efficacy of virtual reality exposure therapy (VRET) for anxiety disorders in children and adolescents: a systematic review. Neuropsychiatr. 2021 Jun;35(2):68-75. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8245387) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/32372291?tool=bestpractice.bmj.com)

71. Freitas JRS, Velosa VHS, Abreu LTN, et al. Virtual reality exposure treatment in phobias: a systematic review. Psychiatr Q. 2021 Dec;92(4):1685-1710. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/34173160?tool=bestpractice.bmj.com)

72. Krijn M, Emmelkamp PM, Olafsson RP, et al. Virtual reality exposure therapy of anxiety disorders: a review. Clin Psychol Rev. 2004 Jul;24(3):259-81. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/15245832?tool=bestpractice.bmj.com)

73. da Costa RT, Sardinha A, Nardi AE. Virtual reality exposure in the treatment of fear of flying. Aviat Space Environ Med. 2008 Sep;79(9):899-903. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/18785359?tool=bestpractice.bmj.com)

74. Gujjar KR, van Wijk A, Kumar R, et al. Efficacy of virtual reality exposure therapy for the treatment of dental phobia in adults: a randomized controlled trial. J Anxiety Disord. 2019 Mar;62:100-8. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/30717830?tool=bestpractice.bmj.com)

75. Freeman D, Haselton P, Freeman J, et al. Automated psychological therapy using immersive virtual reality for treatment of fear of heights: a single-blind, parallel-group, randomised controlled trial. Lancet Psychiatry. 2018 Aug;5(8):625-32. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6063994) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/30007519?tool=bestpractice.bmj.com)

76. Coelho CM, Waters AM, Hine TJ, et al. The use of virtual reality in acrophobia research and treatment. J Anxiety Disord. 2009 Jun;23(5):563-74. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/19282142?tool=bestpractice.bmj.com)

77. Wechsler TF, Kümpers F, Mühlberger A. Inferiority or even superiority of virtual reality exposure therapy in phobias? - A systematic review and quantitative meta-analysis on randomized controlled trials specifically comparing the efficacy of virtual reality exposure to gold standard in vivo exposure in agoraphobia, specific phobia, and social phobia. Front Psychol. 2019 Sep 10;10:1758. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6746888) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/31551840?tool=bestpractice.bmj.com)

78. Parsons TD, Rizzo AA. Affective outcomes of virtual reality exposure therapy for anxiety and specific phobias: a meta-analysis. J Behav Ther Exp Psychiatry. 2008 Sep;39(3):250-61. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/17720136?tool=bestpractice.bmj.com)

79. Meyerbroker K, Emmelkamp PM. Virtual reality exposure therapy in anxiety disorders: a systematic review of process-and-outcome studies. Depress Anxiety. 2010 Oct;27(10):933-44. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/20734361?tool=bestpractice.bmj.com)

80. Morina N, Ijntema H, Meyerbröker K, et al. Can virtual reality exposure therapy gains be generalized to real-life? A meta-analysis of studies applying behavioral assessments. Behav Res Ther. 2015 Nov;74:18-24. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/26355646?tool=bestpractice.bmj.com)

81. Jiang MYW, Upton E, Newby JM. A randomised wait-list controlled pilot trial of one-session virtual reality exposure therapy for blood-injection-injury phobias. J Affect Disord. 2020 Nov 1;276:636-45. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/32871696?tool=bestpractice.bmj.com)

82. Ost LG, Sterner U. Applied tension: a specific behavioral method for treatment of blood phobia. Behav Res Ther. 1987;25(1):25-9. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/3593159?tool=bestpractice.bmj.com)

83. Ayala ES, Meuret AE, Ritz T. Treatments for blood-injury-injection phobia: a critical review of current evidence. J Psychiatr Res. 2009 Oct;43(15):1235-42. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/19464700?tool=bestpractice.bmj.com)

84. McMurtry CM, Taddio A, Noel M, et al. Exposure-based interventions for the management of individuals with high levels of needle fear across the lifespan: a clinical practice guideline and call for further research. Cogn Behav Ther. 2016 Apr;45(3):217-35. Full text (https://www.ncbi.nlm.nih.gov/

pmc/articles/PMC4867871) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/27007463?tool=bestpractice.bmj.com)

85. Ayala ES, Meuret AE, Ritz T. Confrontation with blood and disgust stimuli precipitates respiratory dysregulation in blood-injection-injury phobia. Biol Psychol. 2010 Apr;84(1):88-97. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/20167246?tool=bestpractice.bmj.com)

86. Meuret AE, Simon E, Bhaskara L, et al. Ultra-brief behavioral skills trainings for blood injection injury phobia. Depress Anxiety. 2017 Dec;34(12):1096-105. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/28294471?tool=bestpractice.bmj.com)

87. Otto MW, McHugh RK, Kantak KM. Combined pharmacotherapy and cognitive-behavioral therapy for anxiety disorders: medication effects, glucocorticoids, and attenuated treatment outcomes. Clin Psychol (New York). 2010 Jun 1;17(2):91-103. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4743901) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/26855480?tool=bestpractice.bmj.com)

88. Haug T, Nordgreen T, Öst LG, et al. Self-help treatment of anxiety disorders: a meta-analysis and meta-regression of effects and potential moderators. Clin Psychol Rev. 2012 Jul;32(5):425-45. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/22681915?tool=bestpractice.bmj.com)

89. Marks IM. Living with fear. 2nd ed. New York, NY: McGraw-Hill; 2001.

90. Schneider AJ, Mataix-Cols D, Marks IM, et al. Internet-guided self-help with or without exposure therapy for phobic and panic disorders. Psychother Psychosom. 2005;74(3):154-64. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/15832066?tool=bestpractice.bmj.com)

91. Reger MA, Gahm GA. A meta-analysis of the effects of internet- and computer-based cognitive-behavioral treatments for anxiety. J Clin Psychol. 2009 Jan;65(1):53-75. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/19051274?tool=bestpractice.bmj.com)

92. Ferriter M, Kaltenthaler E, Parry G, et al. Computerised cognitive behaviour therapy for phobias and panic disorder: a systematic review (Provisional abstract). J Pub Ment Health. 2008;7:15-22.

93. Olthuis JV, Watt MC, Bailey K, et al. Therapist-supported internet cognitive behavioural therapy for anxiety disorders in adults. Cochrane Database Syst Rev. 2016 Mar 12;(3):CD011565. Full text (https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011565.pub2/full) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/26968204?tool=bestpractice.bmj.com)

94. Mor S, Grimaldos J, Tur C, et al. Internet- and mobile-based interventions for the treatment of specific phobia: A systematic review and preliminary meta-analysis. Internet Interv. 2021 Dec;26:100462. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8501502) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/34646752?tool=bestpractice.bmj.com)

95. Manassis K, Lee TC, Bennett K, et al. Types of parental involvement in CBT with anxious youth: a preliminary meta-analysis. J Consult Clin Psychol. 2014 Dec;82(6):1163-72. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/24841867?tool=bestpractice.bmj.com)

96. Walczak M, Esbjørn BH, Breinholst S, et al. Parental involvement in cognitive behavior therapy for children with anxiety disorders: 3-year follow-up. Child Psychiatry Hum Dev. 2017 Jun;48(3):444-54. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/27405872?tool=bestpractice.bmj.com)

97. Ost LG. One-session group treatment of spider phobia. Behav Res Ther. 1996 Sep;34(9):707-15. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/8936753?tool=bestpractice.bmj.com)

98. Wannemueller A, Gruszka P, Chwalek S, et al. Large-group one-session treatment: feasibility in highly height fearful individuals and predictors of outcome. Front Psychol. 2019 Oct 24;10:2411. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6842928) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/31749735?tool=bestpractice.bmj.com)

99. Van Gerwen LJ, Spinhoven P, Van Dyck R. Behavioral and cognitive group treatment for fear of flying: a randomized controlled trial. J Behav Ther Exp Psychiatry. 2006 Dec;37(4):358-71. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/16828460?tool=bestpractice.bmj.com)

100. Lilliecreutz C, Josefsson A, Sydsjö G. An open trial with cognitive behavioral therapy for blood- and injection phobia in pregnant women-a group intervention program. Arch Womens Ment Health. 2010 Jun;13(3):259-65. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/19859788?tool=bestpractice.bmj.com)

101. Ollendick TH, Davis TE 3rd. One-session treatment for specific phobias: a review of Öst's single-session exposure with children and adolescents. Cogn Behav Ther. 2013;42(4):275-83. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/23957749?tool=bestpractice.bmj.com)

102. Lebowitz ER, Panza KE, Bloch MH. Family accommodation in obsessive-compulsive and anxiety disorders: a five-year update. Expert Rev Neurother. 2016;16(1):45-53. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4895189) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/26613396?tool=bestpractice.bmj.com)

103. Lewis KM, Amatya K, Coffman MF, et al. Treating nighttime fears in young children with bibliotherapy: evaluating anxiety symptoms and monitoring behavior change. J Anxiety Disord. 2015 Mar;30:103-12. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/25638438?tool=bestpractice.bmj.com)

104. Vigerland S, Ljótsson B, Thulin U, et al. Internet-delivered cognitive behavioural therapy for children with anxiety disorders: a randomised controlled trial. Behav Res Ther. 2016 Jan;76:47-56. Full text (https://www.sciencedirect.com/science/article/pii/S0005796715300553?via%3Dihub) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/26649465?tool=bestpractice.bmj.com)

105. Manassis K, Mendlowitz SL, Scapillato D, et al. Group and individual cognitive-behavioral therapy for childhood anxiety disorders: a randomized trial. J Am Acad Child Adolesc Psychiatry. 2002 Dec;41(12):1423-30. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/12447028?tool=bestpractice.bmj.com)

106. Liber JM, Van Widenfelt BM, Utens EM, et al. No differences between group versus individual treatment of childhood anxiety disorders in a randomised clinical trial. J Child Psychol Psychiatry. 2008 Aug;49(8):886-93. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/18341545?tool=bestpractice.bmj.com)

REFERENCES

107. Ressler KJ, Rothbaum BO, Tannenbaum L, et al. Cognitive enhancers as adjuncts to psychotherapy: use of D-cycloserine in phobic individuals to facilitate extinction of fear. Arch Gen Psychiatry. 2004 Nov;61(11):1136-44. Full text (http://archpsyc.ama-assn.org/cgi/content/full/61/11/1136) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/15520361?tool=bestpractice.bmj.com)

108. Byrne SP, Rapee RM, Richardson R, et al. D-cycloserine enhances generalization of fear extinction in children. Depress Anxiety. 2015 Jun;32(6):408-14. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/25775435?tool=bestpractice.bmj.com)

109. Smits JA, Rosenfield D, Otto MW, et al. D-cycloserine enhancement of fear extinction is specific to successful exposure sessions: evidence from the treatment of height phobia. Biol Psychiatry. 2013 Jun 1;73(11):1054-8. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3636175) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/23332511?tool=bestpractice.bmj.com)

110. Ori R, Amos T, Bergman H, et al. Augmentation of cognitive and behavioural therapies (CBT) with d-cycloserine for anxiety and related disorders. Cochrane Database Syst Rev. 2015 May 10;(5):CD007803. Full text (https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007803.pub2/full) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/25957940?tool=bestpractice.bmj.com)

111. Mataix-Cols D, Fernández de la Cruz L, Monzani B, et al. D-cycloserine augmentation of exposure-based cognitive behavior therapy for anxiety, obsessive-compulsive, and posttraumatic stress disorders: a systematic review and meta-analysis of individual participant data. JAMA Psychiatry. 2017 May 1;74(5):501-10. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/28122091?tool=bestpractice.bmj.com)

112. de Quervain D, Wolf OT, Roozendaal B. Glucocorticoid-induced enhancement of extinction-from animal models to clinical trials. Psychopharmacology (Berl). 2019 Jan;236(1):183-99. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/30610352?tool=bestpractice.bmj.com)

113. de Quervain DJ, Bentz D, Michael T, et al. Glucocorticoids enhance extinction-based psychotherapy. Proc Natl Acad Sci U S A. 2011 Apr 19;108(16):6621-5. Full text (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3081033) Abstract (http://www.ncbi.nlm.nih.gov/pubmed/21444799?tool=bestpractice.bmj.com)

114. Soravia LM, Heinrichs M, Winzeler L, et al. Glucocorticoids enhance in vivo exposure-based therapy of spider phobia. Depress Anxiety. 2014 May;31(5):429-35. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/24265104?tool=bestpractice.bmj.com)

115. Eaton WW, Anthony JC, Gallo J, et al. Natural history of diagnostic interview schedule/DSM-IV major depression: the Baltimore epidemiologic catchment area follow-up. Arch Gen Psychiatry. 1997 Nov;54(11):993-9. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/9366655?tool=bestpractice.bmj.com)

116. Magee WJ, Eaton WW, Wittchen HU, et al. Agoraphobia, simple phobia, and social phobia in the National Comorbidity Survey. Arch Gen Psychiatry. 1996 Feb;53(2):159-68. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/8629891?tool=bestpractice.bmj.com)

117. Trumpf J, Becker ES, Vriends N, et al. Rates and predictors of remission in young women with specific phobia: a prospective community study. J Anxiety Disord. 2009 Oct;23(7):958-64. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/19604666?tool=bestpractice.bmj.com)

118. Grös DF, Antony MM. The assessment and treatment of specific phobias: a review. Curr Psychiatry Rep. 2006 Aug;8(4):298-303. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/16879794?tool=bestpractice.bmj.com)

119. Antony MM, Barlow DH. Specific phobias. In: Barlow DH, ed. Anxiety and its disorders: the nature and treatment of anxiety and panic. 2nd ed. New York, NY: Guilford Press; 2002:380-417.

120. Cemeroglu AP, Can A, Davis AT, et al. Fear of needles in children with type 1 diabetes mellitus on multiple daily injections and continuous subcutaneous insulin infusion. Endocr Pract. 2015 Jan;21(1):46-53. Abstract (http://www.ncbi.nlm.nih.gov/pubmed/25100395?tool=bestpractice.bmj.com)

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Figure 1 – BMJ Best Practice Numeral Style

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