



THE ROLE OF PSYCHOLOGY IN DEVELOPMENT AND DEALING OF FEAR IN HUMANS.

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ABSTRACT

Fear is a simple basic emotion experienced by every single being. It is a fundamental survival mechanism that indicates humans to respond in danger with a fight or flight response in order to keep us safe. Every human body reacts in a different way when it encounters fear. This paper examines the reasons for the growth and prevalence of fear in relation to the mind and the role of psychological intervention in dealing with it. Literature search was done on Google scholar which included the use of keywords 'fear', 'phobias', 'psychological intervention' or 'emotions'. Reference lists having similar titles were also taken into consideration. Available literature search shows that hormones have a vital role in functioning of fear and phobias. Everyone has a different way of dealing with it. An abnormality in processing of fear could potentially lead to psychiatric disorders. Psychology based therapy is an effective way of dealing with it. Fear being an exaggerated emotion needs a plan that works towards the development of its belief. Psychological intervention involving Cognitive behavioural therapy, Rational emotive behaviour therapy, Systematic desensitization and many others have been proved to overcome fears and phobias.

KEYWORDS : Fear, Phobia, Emotions, Psychological intervention.

INTRODUCTION

As humans, all of us have felt afraid of something in this world. Might be an insect, an animal, any location, situations, objects or instances. This exaggerated feeling of being scared is often known as fear which all of us have. Sometimes, one might not even know what kind of fear they have until they endure it. Every individual on this planet has a different way of reacting to things they are scared off. Similarly, it is not necessary that each one is scared of the same thing. We often feel tension when we are in an uncomfortable situation thinking about all possible consequences that can happen in the future. This feeling is fear. Some examples include being scared of lizards that you do not step in the room thinking that it might fall on you or being scared of a water body thinking that you might drown into it. These examples clearly indicate how thinking about dreadful consequences can lead one to experience fear. Fear is usually listed among emotions. So; when this emotion also known as a survival mechanism is felt, the human body undergoes a number of physical changes to activate the 'flight or fight' mode so as to combat or run away from the threat. Hence, this is one of the major reasons why fear is referred to as a survival mechanism. Fear is explicitly not identified as a conscious feeling or emotion rather it brings the conscious experience to reality which leads to a certain behaviour (Adolphs, 2013).

When talking about feeling scared or experiencing fear, one important concept that steps in is anxiety. Anxiety is psychological, physiological and behavioural in nature which is induced by an actual or potential threat. It is characterized by arousal, expectancy, autonomic and neuroendocrine activation, and specific behaviour patterns (Stiemer, 2002).

In lay man's terms, it can be said that anxiety is a result of fear. For some authors, anxiety is indistinguishable whereas for some it is a distinct phenomenon. So, when one feels scared, the human body creates a condition to trigger adaptive responses. Thus, Ethologists define fear as a motivational state aroused by specific stimuli that give rise to defensive behaviour or escape. (McFarland, n.d). Humans learn to fear from situations that have led to pain or stress in the past and hence develop an avoidance behaviour when they reencounter a similar situation. When a baby is born, he may be scared of many things in his environment such as a loud noise, a particular clothing etc, but become habituated

(Craig. 1995). If the inflicted pain or stress from a particular situation arises quite often, it may result in long term fear which is also called as phobia. All these terms are emotional states that have an underlying brain and behavioural mechanism. This paper focuses on the reasons for the growth and prevalence of fear in relation to the mind.

Development of Fear

Undergoing a terrifying traumatic event, such as being stuck in an elevator or experiencing an attack by an animal, may lead to the formation of fears. Fears can also be formed due to learning about negative experiences. Stressful events, such as nearly drowning, or being at extreme heights, and animal or insect bites or hearing about things like plane crashes, or news about an aggressive animal can all be sources of a variety of fears. Numerous fears are based on real-life events that could or could not be intentionally remembered. As an example, a fear of dogs could stem from being attacked by a dog as a little kid. This makes fear a form of anxiety which is object oriented. Psychologically, this anxiety is therefore manifested in three ways i.e cognitively, behaviourally and in physiological reactions. Biological perspective aims to explain the development of fear through overstimulation, cognitive incongruity, and response unavailability (Kelvans, 1997). For example; a person is scared of a spider. So, when he sees a spider there are too many instructions or information in the mind about what to do which is also called overstimulation. With such information overload, the person faces difficulty in reconciling some events which is referred as cognitive incongruity. This leads to physiological reactions wherein the person is confused about his reaction in that particular situation. The Gamma-Amino Butyric Acid (GABA) system is responsible for fear and anxiety. It is an inhibiting transmitter in the body that helps to maintain a normal flow of information by reducing the flow of neural transmission. The GABA binds in to elicit an effect mentioned above. The other perspective is cognitive in nature which describes the development and maintenance of fear in relation to three reasons namely loss of control, inability to make a coping response and then anxiety. Loss of control happens when there are too many uncontrollable events which loses an individual's ability to think at the moment (Seligman, 1975). This in turn leads an individual to experience feelings of anxiety. Since anxiety is quite ambiguous, it is the key which prevents an individual from elaborating clear action patterns

to handle the situation effectively (Lazarus,1991). This cognitive perspective can be well understood with an instance fear of public speaking. A student having this fear if asked to speak on a topic in front of the class in an oral exam will face a similar mechanism which in the end will produce anxiety. On the other hand, learning perspective on development of fear and anxiety has a different view, (Mowrer,1939) stating that fears and anxiety are acquirable or are conditioned drives. When an individual sees their closed one having a fear, they also tend to acquire it. This can be best understood with the help of a real-life example; when a mother is scared of an insect, the child also learns it and later gets scared of the same thing because of observation.

Functioning of fear in Human Body

Fear is controlled by the part of the brain located in temporal lobe called amygdala. When stress triggers the amygdala, it causes a temporary override to the consciousness so that the body can avert all of its energy to face the threat (Salzman, 2019). It then activates the areas involved in preparation for the motor functions involved in the fight or flight response. The emotional reaction that we feel when we experience fear serves a purpose, it intensifies our alertness, keeping the brain and body focused on staying safe until the threat is defused (Javanbakht et al,2017). The hippocampus helps regulate the fear response along with the prefrontal cortex, which is involved in advanced decision-making, centring the calculation of threat that is being faced. This leads to bodily changes that prepare us to be more efficient in danger as usual like our brain becomes hyper alert, pupils dilate, heart rate and blood pressure rise and organs that are not vital in survival slow down. The hippocampus is closely connected with the amygdala along with the prefrontal cortex to help the brain interpret the perceived threat (Robinson et al, 2013). They are a part of a higher processing level through which the threat is measured by its context; this helps a person know whether the perceived threat they're facing is real or not. For instance, when we see a lion in the wild it will trigger a powerful fear reaction, but the reaction to seeing the same lion in a zoo will be less powerful as our brain has reasoned to give a more fitting reaction to the threat. This is also how we react while watching horror movies and such as our mind will reason that something on the screen is no actual threat which would cause us to have a calmer reaction. This is due to the hippocampus and the frontal cortex processing the contextual information, and inhibitory pathways diminish the amygdala fear response and its effects (Ressler, 2010).

When we feel our fear being triggered all of our muscles, including the ones at the base of each hair, become tenser causing piloerections (Reynolds,2020). Metabolically speaking, quantities of glucose in our blood spike offering a ready store of energy if the need for action does occur. The levels of calcium as well as white blood cells in our bloodstream increase (Murray et al, 2018). Hormones such as cortisol, a primary stress hormone, and adrenaline, secreted by the adrenal gland are released (Snider, 2020). The reaction to fear starts in the brain and spreads throughout the body adjusting for the best fight or defence reaction. The amygdala is dedicated to detecting the emotional importance of the stimuli such as how much something stands out to us. These almond-shaped bundles of neurons form a portion of the limbic system. It has a vital role in the processing of emotions, which includes fear. The pituitary gland secretes adrenocorticotropic hormone whose main function is to release cortisol into the blood. At this time, the sympathetic nervous system gives the adrenal gland a push boosting it to squirt a dose of epinephrine into the bloodstream. The body also releases cortisol in response to the adrenocorticotropic hormone. Flowing cortisol turns fatty acids into energy ready for the muscles to use, should the need arise. Catecholamine hormones, including epinephrine and norepinephrine,

prepare muscles for violent action (Ganga et al, 2006). When we sense a potential danger, our bodies release hormones that serve the purpose to either slow or shut down functions that we do not need for survival, such as our digestive system. Also, the hormones can boost activity in the heart and lungs which can reduce activity in the stomach and intestines which causes the feeling of "butterflies" in the stomach (Carabotti et al, 2015).

The hormones sharpen functions that might help us survive the danger like our eyesight, your pupils dilate to confirm that you are able to see your threat more distinctly. Involuntary functions are also taken care. It is split into two branches: parasympathetic nervous system, and the sympathetic nervous system which is known as the fight-or-flight system (Mobbs & Kim, 2015). Fear pushes the fight-or-flight reaction into overdrive. All of the things that we considered as longer-term interests get diverted to the current interest fight or flight. People could get sweaty and red-faced or have cold hands when they are feeling afraid. This could be because the blood flows away from the edges of the body toward the larger, interior muscles. As our body is deciding that if we are going to be fighting or fleeing, we would want as much blood flow to the big muscles of the body.

Phobias

Fear when felt leads to a physical response known as the "fight or flight" response, through which your body prepares itself to either enter combat with the threat or run away from the threat. This biochemical reaction is most probably an evolutionary development. It's an instinctive response that is critical to our survival. When we face a perceived threat, our bodies respond in particular ways. The emotional response to fear, on the other hand, depends from person to person. Irregular levels of anxiety and fear can lead to significant suffering and dysfunction and threshold a person's capability for joy of life and success (National Institute of Mental Health, 2018). Roughly one in four people face forms of anxiety disorder during their lives, and about 8 percent experience post-traumatic stress disorder (PTSD). Disorders of anxiety and fear are inclusive of phobias, social phobia, separation anxiety, PTSD, generalized anxiety disorder and obsessive-compulsive disorder (Martin, 2003). When fear reaches to an extent at which an individual's day to day functioning is hampered, it is constituted as Phobia.

A phobia is an excessive and overwhelming fear that results in avoidance or extreme distress (American Psychiatric Association, 2013). If you have a phobia, you might experience some sort of panic or a deep sense of dread when facing the object of our fear. The phobias can be being excessively afraid of a situation or a certain place or object. Much unlike general anxiety disorders, a phobia is usually connected to a specific place or situation or object. The impact of a triggered reaction to a phobia can range from bothersome to brutally disabling. People that have phobias do often realize that their fear is unreasonable, but they are unable to do something about it. The term 'phobia' is often used to indicate a fear of a single specific trigger. There are three types of phobias that are recognized by the American Psychiatric Association (APA). These are inclusive of Specific phobia which is a powerful, irrational fear of a particular trigger. Social phobia, also known as social anxiety which is a type of anxiety disorder that causes extreme fear in social settings. People with this phobia have trouble speaking to others or meeting new people and attending social gatherings. This is as they fear being judged or scrutinized by others. It is not like shyness. The third one is Agoraphobia which is a fear of settings from which it would be tough to escape from if the person were to experience severe panic, such as being in a lift. It is the fear of being alone in public places from which there is no easy escape. People with agoraphobia have a bigger risk of panicking (American Psychiatric Association, 2013).

Specific phobias are also known as simple phobias as they can clearly be linked to a distinguishable cause that may not normally occur in the daily life of an individual, such as dog or snakes or spiders. These are therefore not very likely to affect everyday living in a momentous way. Social anxiety and agoraphobia are also known as complex phobias, as their triggers are less clearly recognized (American Psychiatric Association, 2005). Anxiety could be considered normal for stressful situations like speaking in public or giving a test. It is only a severe indicator of an illness when the feelings become overwhelming and all consuming. There are several anxiety disorders like panic disorder, post-traumatic stress disorder and obsessive-compulsive disorder. People with such phobias can also find it tougher to evade their triggers, which could be things like leaving the house or being in an enormous crowd. A phobia is diagnosable when a person begins reorganizing their lives to avoid the cause of their fear. The reaction to these phobias is more severe than the usual fear reaction. The role of genetics and environment in the development of phobia from fear should not be ignored. There could be a connection between your own specific phobia and the phobia of your parents possibly due to our genetics or learned behaviour. Also, children that have a close relative with an anxiety disorder can be at a risk of developing a phobia with a prevalence of 12% (Kessler et al, 2005).

Freezing in fear

An honestly overwhelming and paralyzing fear response which is freezing is assumed to occur when neither fight nor flight is presented to you as a valid solution. However, before choosing whether to flee or fight, most animals freeze for a few milliseconds to evaluate the situation before making the next move. Sometimes staying frozen is the best defence. If you freeze as a response, it can be because you have been so overpowered and trapped that you have no option to flee or fight so instead you end up freezing.

A study has identified the neurological root of the freezing response. The response is generated by cross-talk between the Periaqueductal Gray (PAG), which is a brain region responsible for dictating how humans and animals respond to perceived danger, and the cerebellum (Waters & Lumb, 2008). The PAG gathers numerous types of sensory information about potential threats and triggers automatic reflexive responses that cause us to: freeze in place, give us the blood flow to promptly flee, or the adrenaline burst to fight. The University of Bristol neuroscientists have identified a specific brain pathway leading from the PAG to a highly localized part of the cerebellum called the pyramis, which causes the body to automatically freeze in place in adult rats. This has most probably occurred often during hunting in the ancient times like when facing a sabre-tooth tiger and we just see no way out. So, we act similarly to a number of animals by playing dead (Koutsikou et al, 2014).

In the case of a genuine freeze response, this is not a conscious decision as it is when the primitive part of our brain takes over and immobilizes us. The thought process to doing this is hoping that our predator will lose interest and walk off. It's also a guess that freezing has some psychological benefits. As many people who have frozen in response to a threat, claim to have little or no memory of the trauma. That might protect your sanity or shield you from any psychological harm. If, for example, you have been completely overpowered in an assault scenario, triggering the freeze response might shut down your attentional systems, so that you don't have to process what is happening to you. The event is so shocking or overwhelming, so implausible to you that it is thought you face a "red-out", where strong emotions prevent you from processing information about the distress that you are experiencing. So, although people may be shocked after experiencing a freeze response, as with all emotions, it still likely serves a handy and adaptive role.

Long term effect of fear on Humans

It can damage development of long-term memories and could cause damage to some parts of the brain, like the hippocampus. This could make it even more challenging to control fear and can cause a person to be anxious most of the time. Like to someone in chronic fear, the world looks scary and their memories confirm that. Fear can interrupt processes in our brains that allows us to regulate emotions, reflect before acting, read non-verbal cues and additional information presented to us, and act decently. This causes impacts on our thinking and decision-making in undesirable ways, leaving us susceptible to intense emotions and impulsive reactions. All of these things can leave us incapable of acting appropriately.

Feeling fear is similar to stress and can cause cardiovascular damage, gastrointestinal problems such as ulcers and irritable bowel syndrome, and decreased fertility and it weakens our immune system (American Psychological Association, 2018).

Dealing with Fears and Phobias

Mental Health is an important construct which receives very little attention from the public because it isn't visible to the eyes and the one that is visible is considered to be abnormal or insane. Problems like fears, phobia, anxiety can only be understood by the ones experiencing it. Thus, such conditions of fears, phobias and anxiety which normally begin at an early age, should get an appropriate consultation and treatment or it could become draining and chronic thereby affecting a person's life (World Health Organization, 2005). There are currently a lot of treatments to these that can work in a relatively short time period, in the form of psychotherapy and medications.

Therapy

Cognitive behavioural therapy

Cognitive behavioural therapy is a type of psychotherapeutic treatment that assists in teaching people how to recognize and alter destructive thought patterns that have a negative influence on behaviour and emotions, dysfunctional beliefs, and negative reactions to the phobic situations. In easier terms, it can be stated that this therapy gives a meaning to fear or anxiety (Ishiyama, 1986). It involves introduction to the source of the fear in a controlled setting, this treatment can reverse people's previously conditioned behaviours and reduce anxiety. This therapy focuses on trying to change the automatic negative thoughts that can contribute to worsen the anxiety and their reaction to the phobia, involves exposure combined with other techniques to discover ways to view and cope with the feared object, circumstance or situation differently. These natural negative thoughts are challenged, and, as the therapy goes on, replaced with more objective and realistic thoughts (Kaczurkin & Foa, 2015).

Similarly, under the same umbrella category is exposure therapy, it is a treatment formed to help people face their fears and get over them. Psychologists often recommend exposure therapy, which can take place in many types like imaginal exposure through which you intensely imagine the feared object, setting or activity or interoceptive exposure through which a person deliberately brings on physical sensations that are harmless, yet feared. Then there is vivo exposure in which one directly faces a feared object circumstance or activity in real life (American Psychological Association, 2020). Exposure therapy can be done in different ways like graded exposure, flooding, systematic desensitization. In graded exposure a psychologist aids one to create a fear ladder, wherein ranked by difficulty progressing towards harder exposures. Exposure therapy is said to help over time reducing their reactions, weakening previously learned associations between the source of the phobia and bad outcomes.

Systematic desensitization is when some exposure is combined with calming exercises to make them feel more controllable and to associate the feared objects, activities or circumstances with relaxation (Wolpe & Lang, 1964). During systematic desensitization you work your way up through levels of fear that you will identify at the start by rating frightening levels of your fear on a scale of 1 to 10, starting with the least fearful exposure. This approach also involves the use of relaxation techniques such as diaphragmatic breathing visualization progressive muscle relaxation.

Dialectical behaviour therapy

Dialectical behaviour therapy deals with thoughts and behaviours while including strategies for instance emotional regulation (West, 2016). It has the main goal to teach people to live in the moment and develop healthy ways to cope with stress and regulate their emotions. Then there is multimodal therapy that suggests that psychological issues must be treated by implementing seven different but linked qualities, which are behaviour, affect, sensation, imagery, cognition, interpersonal factors, and biological considerations.

Rational emotive behaviour therapy

Rational emotive behaviour therapy consists of detecting irrational beliefs, actively challenging those beliefs, and finally learning to recognize and change these thought patterns. It is an action-oriented method that's focused on assisting people in dealing with irrational beliefs and learning how to cope with their emotions, thoughts, and behaviours in a healthier, more realistic way. There are core principles called ABCs in REBT A is the activating event that causes a negative response, B is or are the beliefs that you might have about the situation, C is or are the consequences often the distressing emotions due to B. REBT uses three main types of techniques which correspond with the principles which are problem solving techniques, cognitive restructuring techniques, and coping techniques - such as relaxation and meditation (Anderson, 2002).

Lifestyle strategies to do on your own would be

Educating yourself about your fear. If your fear is based on something that is not necessarily true, or it's based on something you don't know. Then acquire the information and get the knowledge needed to tell the difference between the facts rather than the low possibilities.

- Gaining a sense of proportion, trying to find out how big of a deal it really is. Sometimes rather than fearing something logically we exaggerate, in our own minds. Rather than facing the reality of it, we should expose ourselves to a better thought process. Such as thinking, what is the worst that could happen? Or is it really that bad? So that we learn to face the reality and we can react better appropriately.
- Naming the fear. Sometimes it can be as simple as just stating what your fear is to give you the strength to deal with it. Say your fear out loud, write it down and confront it or you can focus your mind on it. This is when you try to ignore your fear, it will grow, possibly out of proportion. When you manage to confront it, it will shrink back to proportion where you can manage it.
- Also, strategies that help you learn how to tolerate your anxiety, relaxing techniques like deep breathing, yoga. Or exercising and physical activities can help you cope with your stress.
- Rationalization, achieving a positive goal, defence mechanisms
- Psycheducate others about their fears so that one finds a solution of their own. The more you talk about it, the less the fear.
- Exposing yourself to the source of your fear in daily situations till it is normal as facing our brain with the fear more often will make it less fearful.

- Imagining yourself in situations of confronting your fears and writing or drawing about them.

Methodology

Literature search in the area of Psychology and Fear was done on Google Scholar in July, 2021. Search terms included 'fears', 'phobias', 'emotions', 'psychological intervention', and 'psychological therapy'. Studies based on the development and maintenance of fear and phobias were also taken into consideration. Reference lists of such studies were examined to obtain descriptive findings to prove the role of psychology in growth and treatment of fear.

RESULTS AND DISCUSSION

Available literature search shows strong evidence of psychology in development and maintenance of fear. During the early stages of development, infants generally have the fear of many things around them. However, genetics and environment are both known to develop fear as these factors lead to changes in the neural system. Available research shows that the brain is an integral part which shows how hormones, neurotransmitters and the area of the body play a vital role in functioning of fears and phobias. Fear is a central motive state of action tendencies in which the amygdala has a central role to play as alterations in the functioning of it contribute to the development and maintenance of fears (Fox & Kalin, 2014). But on the first hand, it is the hippocampus which is responsible because it helps to maintain memories and until a person doesn't have a painful memory of the fearful situation that happened earlier, the further chemical reaction in the brain would not occur. This can also be explained with the perspective of learning psychologists which states that the development of fear occurs when a conditioned stimulus is paired with an aversive event, it elicits a fear response which is formed and consolidated into the long-term memory (LeDoux, 2003). When a physical danger is present, the human body feels stressed, leading to the flight or fight mode due to release of hormones from the adrenal glands on activation of the sympathetic nervous system. This triggers the release of catecholamines and changes in the body. Changes in heart rate, dilated pupils, pale or flushed skin, trembling, shortness of breath, upset stomach and other bowel issues. These physiological changes are quickly adapted by the body to save oneself from the potential threat. Hence, the flight and fight response can also be called as an active defence response in which the perception drops but the hearing sharpens (Nunez, 2020). Another secreted hormone is cortisol which is released during threat so that the body functions properly. This keeps in check the bone health, immune system and metabolism of food. Even if there is no actual threat present, the human body is made up in such a way that it will prepare itself for upcoming danger. As mentioned above, a neurotransmitter called GABA inhibition leads to fear; but the function is totally dependent on benzodiazepines. Those who produce less benzodiazepines are subjected to more anxiety and fear. This happens because benzodiazepines bind the GABA receptor cells to increase its ability so as to reduce the symptoms of fear (Tallman et al, 1980). This is how we see our own psychology of mind controlling our body the way we feel and perceive things around us. When fear gets out of control and starts to hamper daily living, it is considered as phobia. As per National Institute of Mental Health an estimated US population of 9.1% have specific phobia of which females are on the higher side (National Institute of Mental Health, 2003). The number seems to be rising every year. If fears can develop, it can also diminish including phobias. Psychological tools and therapy are the most effective way to deal with it. The most evidence-based treatment is cognitive behavioural therapy (Rothbaum & Davis, 2003) of which exposure therapy is based on principles of fear extinction learning. It also involves identification of what triggers the anxiety followed by systematic desensitization which is

another main technique of CBT that trigger in the absence of any threat (Myers & Davis, 2002).

Unfortunately, only a little over 50% of individuals with anxiety respond to this therapy (Walkup et al, 2008). REBT is also an effective tool that helps in fear extinction by posing and converting the irrational beliefs to rational ones. Self-help techniques such as talking to loved ones, listening to music or a motivational speech, watching or imagining your fear again and again, educating others about a fear can also help. On the other hand, some researchers argue that fear is necessary for humans to live (Gill & Burrow, 2018) for if fear does not exist, humans will have no performance pressure and will take things lightly. However, this area has not received much attention.

CONCLUSION:

Fear being an exaggerated emotion needs a plan that works towards the development of its belief. It begins to develop because of incongruent cognitive processing, conditioning or other biological processes. Brain is the central to the development and maintenance of fear. The release of hormones regulates the human body to fight or flee in a dreadful situation. Extensive fears can lead to pathological anxiety or psychiatric disorders. Psychological intervention involving Cognitive behavioural therapy, Rational emotive behaviour therapy, Systematic desensitization and many others have been proved to overcome fears and phobias. With the help of self-help tactics, one can overcome the symptoms of fear. If one thinks about how and why the body is functioning in a particular way while encountering danger, one will be able to figure out ways to manage it.

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