Short communication

Empathy

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Abstract

Empathy is the ability to resonate with another person's feelings. It is one of the most important elements of higher social functioning in humans. When empathy is absent, violence, abuse, discrimination and selfishness become common. This elusive capacity has interested researchers from a wide range of disciplines and many studies have been conducted to explore the various aspects of empathy such as its development in childhood and the neural basis of empathy. With increase in the incidence of disorders such as Autism spectrum disorder and psychopathy which are considered to be disorders of empathy, it becomes essential to know about the basic concepts of empathy and its neural basis. Moreover recently researchers have focused on the importance of empathy in patient care and how it can be taught to medical students since it plays an important role in successful clinical practice. This short communication is intended to provide an insight into What empathy is?, Why humans possess it?, How it develops?, What are its social outcomes?, What happens when it's absent? and finally about the therapeutic outcomes of empathy.

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Origin and definitions of empathy

Empathy was derived from the term "Einfuhlung" which referred to the tendency of observers to project themselves into that which they observe. It was introduced by Lipps in 1897. The word empathy was coined by Titchener in 1909 as a translation to the word Einfuhlung.[1] Hoffman defined empathy as an affective response more appropriate to someone else's situation than to one's own.[2] Empathy helps to create and maintain social bonds with others, enabling people to comprehend, share and respond appropriately to others' emotional states.[3]

What is the difference between empathy and sympathy? Sympathy is an emotional response that results from another person's emotional state which consists of feelings of sorrow or concern for another person's welfare.[4] To be sympathetic is to have feelings (pathos) that are same as (sym) those of the other. To be empathetic is to know, sense or enter into (em) the feelings (pathos) of the other.[5]

Empathy can be the result of thought as well as feeling, thus it has two components, affective or emotional empathy and cognitive empathy. Emotional empathy is feeling what another person is feeling. Cognitive empathy is understanding why that person feels as he or she does. It is based on seeing, imagining and thinking about the situation from other person's point of view.[5]So empathy is an affective response to the emotions of another,

a cognitively based understanding of other people and the communication of such an understanding.[1]

Evolutionary advantages of empathy

There are many characteristics that make humans stand out from the rest of the animal kingdom such as the use of tools, language, sociable behaviour, cooking of food etc. But many of these are not peculiar to human beings. But empathy is suggested to be something special, extraordinary and unique to human beings.[5]

Why should humans possess this elusive capacity?

If survival is the basis of evolution, any behaviour that promotes survival will inevitably be selected for. Living in groups and being sociable increases our chances of staying alive. For successful group living, humans should have the capacity to empathise both at the emotional level to keep members connected and at the cognitive level so that members can regulate, coordinate and develop their individual and collective behaviour. Empathy promotes cooperative behaviour that enable groups of individuals to share in the responsibility for detecting danger and social communication and interaction within a safe environment.[5]

Development of empathy

The ability to empathise begins at an early age, with infants as young as 18 hours who were exposed to the sound of another infant crying displayed distress reactions. They responded more strongly to another infant's cry than to a variety of control stimuli such as synthetic cry sounds, non-human cry sounds etc.[6-8] During the second year of life, toddlers display empathic reactions such as concern (e.g. I'm sorry), hypothesis testing (e.g. What happened?) and pro social behaviour (e.g. Are you ok?) to other's distress. At the same time, toddlers become capable of sophisticated helping behaviours.[9,10] As children reach the preschool years, significant developments occur in cognitive empathy also sometimes referred to as theory of mind. This allows children to engage in more effective helping strategies as they are viewing the situation more accurately.[11] There is evidence to suggest that these early dispositions toward empathy and prosocial behaviour may be consistent and stable over time. This suggests that empathy develops as a pro social personality trait in children that motivates helping behaviours into young adulthood.[12]

Various factors contribute to the development of empathy. These factors include genetics, facial mimicry and imitation, sub serving areas of the brain such as the mirror neuron system and the limbic system, child temperament, parenting factors such as warmth, parent-child synchrony, and other qualities of the parent-child relationship. If one or more of these factors function atypically, they may contribute to empathy deficits, such as those present in autism spectrum disorders or psychopathy.[11]

Neural basis of empathy

Several areas of brain are implicated in empathic behaviour and the development of empathy eg. Mirror neurons. Mirror neurons are a special class of motor neurons that respond similarly to the perception of actions in others and the production of actions in oneself which was first identified in macaque monkeys.[13] Human brain also contains a similar mirror neuron system which lies in premotor and surrounding areas of frontal and parietal lobes.[14] They are not responsible for empathic feelings on their own, but they provide a neural basis for connecting our own and other's experiences.

According to de Waal theory, viewing another's emotional state automatically and unconsciously activates one's personal associations with that state.[15]The mirror neuron system may explain how this automatic state matching occurs in the brain. In order to induce empathy, mirror neurons must communicate with many other areas of the brain. The insular cortex has been shown to connect premotor mirror neurons to the limbic system, which processes the emotional aspects of empathy inducing situations.[15-17]The prefrontal cortex appears to be important for reducing the personal distress that is activated in response to another's distress; this allows the observer to connect on a more cognitive level with the other's experience and aids in helping behavior.[18] In order to engage in perspective-taking, which is integral for cognitive empathy, areas of the frontal and parietal lobes involved in executive functioning

need to be activated, including the frontopolar cortex, the ventromedial prefrontal cortex, the medial prefrontal cortex, and the right inferior parietal lobe.[18] During this process, areas of the temporal lobe are also activated, providing access to long term memories that may be relevant to the situation.[15]

Social outcomes of empathy

- In children, empathy plays a part in learning right and wrong.[19]
- It is an important precursor for developing pro social or helping behavior.[9,10]
- It plays an important role in becoming a socially competent person.[4]
- It helps to improve the quality of social relationships.[20]

Disorders of empathy

Two prototypical disorders of empathy are autism spectrum disorder (ASD) and psychopathy. ASD is a neurodevelopmental disorder characterized by impairment in social interaction, reciprocal social communication and repetitive behaviour. The presence of empathy deficits in ASD is well established. Children with ASD are less likely to respond to and show less concern for others in distress compared to typically developing children.[21] Some studies have suggested dysfunction of mirror neuron system as a cause for empathy deficit in those with ASD.[22] Studies show that ASD is characterized by predominant deficit in cognitive empathy.

Psychopathy is a well established array of symptoms that begin in childhood. It is characterized by lack of emotional empathy and guilt as well as the presence of antisocial behavior.[23] Studies show dysfunction in empathy related brain areas particularly limbic and paralimbic areas among psychopathic individuals.[24,25]

Empathy and health care

Empathy has always been considered as an essential component of compassionate care and it plays an important role in the doctor-patient relationship. Although many factors influence patient's enablement, patient's perceptions of their doctor's empathy and caring attitude are of key importance in contributing to patient outcomes in clinical practice.[26] A doctor may be listening carefully to a patient, but the only way for the patient to know that, is for the doctor to reflect that he understands the patient's concerns i.e., to respond empathically. If it is a goal of medicine to treat the patient, to alleviate suffering and not simply cure disease, then empathy is a necessary clinical skill.[27] Research has shown that empathy is also useful on other levels; it has been found to be directly therapeutic by reducing anxiety in patients.[28] Empathic communication is associated with improved patient satisfaction, increased adherence to treatment and fewer malpractice complaints as well as increased physician well being and professional satisfaction.[29] It is also important that health care professionals find a delicate balance between being too empathetic with their patients and emotional detachment. So, emotional regulation skills are critical for physicians to keep their emotions under control and maintain personal stability.[26]

Many researchers currently think that it is possible to teach and learn empathy. For example, enhancing observation skills should make it easier to detect a patient's emotional state, while improving communication skills should help a physician convey his feelings to the patient.[27] Studies show that educational interventions such as small group sessions on the doctor-patient relationship, role plays to portray empathy, communication skills training, problem based learning methods and hospital visits to directly encounter patient interviews can be successful in cultivating and enhancing empathy in undergraduate medical students.[30]

Conclusion

Empathy is a natural competency that has evolved to form and maintain social bonds. It is essential for motivating prosocial behaviour toward others. Further research is required to identify the brain areas involved in empathic behaviour. This facilitates a better understanding of the

pathogenesis of disorders of empathy such as ASD and psychopathy and may also suggest pathways for improving the ability to empathise in them.

On another perspective, importance of empathy is extensively studied in the field of medicine. A physician empathy can improve the patient's physiological and psychological adjustment to disease, contribute to healing and can influence the overall well being of the patients. Hence it becomes essential to inculcate the skills of empathy to the medical students who are the future physicians.

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