Cognitive Impairment in Borderline Personality Disorder and Its Formation

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Abstract: This paper examines the role of cognitive schemas in the development and manifestation of symptoms of Borderline Personality Disorder (BPD), a complex mental health condition marked by emotional instability, intense interpersonal relationships, fear of abandonment, and impulsive, self-destructive behaviours. Cognitive schemas are internal frameworks that influence how people perceive and interpret external information, and in individuals with BPD, these schemas are often distorted, particularly in relation to self-other perceptions, leading to maladaptive emotional and behavioural responses. Early life experiences, such as childhood trauma, contribute to the formation of these distorted schemas, which in turn reinforce feelings of worthlessness, abandonment, and unstable self-identity. The study examines how these thought patterns, which include cognitive biases like catastrophising and all-or-nothing thinking, contribute to the persistence of BPD symptoms. Additionally, it highlights treatment modalities that can assist people with BPD in identifying and reshaping their maladaptive cognitive schemas, such as Cognitive Behavioural Therapy (CBT), Dialectical Behaviour Therapy (DBT), and Schema Therapy (ST). Despite the effectiveness of these therapies, resolving the profoundly embedded cognitive processes that define BPD still presents difficulties.

1 INTRODUCTION

Borderline Personality Disorder (BPD) is a complex mental condition featuring emotional instability, intense interpersonal relationships, fear of abandonment, and impulsivity and self-destructive behaviors (Kegerreis, 2007). These symptoms may be related to self-other mergence of them (Story et al., 2024). Schema, which is internal thinking systems that influence how individuals interpret their perceptions, plays a critical role in shaping these symptoms. Cognitive behavioural therapy (CBT) has demonstrated remarkable efficacy in treating Borderline Personality Disorder (BPD). BPD patients frequently experience emotional instability, impulsive behaviours, poor self-image, and interpersonal difficulties. CBT helps patients recognise and change negative thought patterns and behavioural responses, especially in the areas of emotional regulation and self-perception. CBT for BPD usually entails emotion management, impulse control, and the development of interpersonal skills. During therapy, patients learn to recognise cognitive distortions that cause emotional reactions and adopt more realistic, positive thought patterns to deal with stress and conflicts. Additionally, CBT emphasises behaviour modification by rewarding adaptive behaviours and decreasing maladaptive behaviours, such as substance abuse or self-harm, thus improving overall quality of life. According to research, cognitive behavioural therapy (CBT) can help with BPD symptoms, especially with emotional control, suicidal thoughts, and self-harming behaviours. Compared to medicine alone, cognitive behavioural therapy (CBT) typically produces more lasting improvements and does not result in reliance, even if treatment may take longer. Additionally, it promotes increased self-awareness and long-term self-management, both of which are essential for BPD sufferers to continue making improvement after therapy ends.

Since certain schemas developed to adapt to early-life experiences, by studying how these cognitive schemas manifest in these negative symptoms, this essay will discuss the critical role of schemas in understanding and addressing BPD symptoms.

2 UNDERSTANDING BORDERLINE PERSONALITY DISORDER

Borderline Personality Disorder is a mental health condition characterized by cognition disability and compulsory behavioral patterns of emotional instability, intense interpersonal relationships, impulsivity, and fear of abandonment. It is a complex personality disorder that can lead to malfunction on cognitive schemas, and thus causes distorted emotion experience for the patients and borderline interpersonal dynamics.

2.1 Emotional Instability

To begin with, one of the most significant features of BPD is emotional instability. Emotional instability includes extreme emotions and rapid mood swings, which range from deep feelings of sadness or hopelessness to irritability or anxiety. These moods are often in response to perceived illusional interpersonal threats or rejection, like the sense of abandonment. For instance, a person with BPD might feel an intense and overwhelming sense of fear for being deserted, even though the stimuli may just be a simple different feeling of others. The person with BPD may interpret the disagreements between people as a hint that forecasts the coming debasement or critics from others. Despite that this person may not specifically be someone that really matters to the person with BPD, he may still represent it as a rejection made by the group, alienating the individual from being socially connected, leading to rapid shifts in mood and behavior. Moreover, the self-other mergence also exists in BPD symptoms. The fusion of self and other further weakens the ego and makes it unable to handle frustration and

worry. Because the person with BPD is torn between the extremes of a panicked infantile neediness and a fear of being stuck, this adds to their pattern of unstable and insecure attachment (Kegerreis, 2007). The cognitive malfunction which leads to uncontrollable intense mood is central to the experience of BPD, making it difficult for individuals to maintain emotional balance in their daily life.

2.2 Intense Interpersonal Relationships

Another typical symptom of BPD is intense interpersonal relationships. Since person diagnosed with BPD may show a fusion of self and other representations, as they perceive other's expectation as a learning signal, they may show high dependence on building relationships with others which provide them with a sense of security (Story et al., 2024). What's more, a significant interaction of the behavior pattern is observed between BPD symptoms and people without BPD around them, which indicates that this fusion may lead to obscure self-value and adjusting to others' value (Story et al., 2024). In this case, they tend to oscillate between idealizing people to reduce cognitive dissonance when they try to socialize at the cost of adjusting to others values and then quickly devaluing them when feelings of abandonment or betrayal arise, which provide them a rationalization that the disagreement is caused by the other, indicating that they themselves are not excluded by social groups. This pattern, often referred to as "splitting," reflects a black-and-white thinking style. Since BPD criteria includes identity diffusion, this lack of a stable self-identity can contribute to these fluctuations, as people with BPD often rely heavily on others to define personal image and values (Clarkin and Kernberg, 1992). In addition, since it is observed that BPD symptoms include a impairment in recognizing other's facial expression as well as certain level of difficulty in identifying their own emotions, which would lead to misinterpretations in socializing, this provide individuals with BPD a suitable state to assume the extreme outcome of being abandoned, as they fail to sense the signals

but only can guess and rationalize (Domes et al., 2011).

2.3 Positioning

Additionally, the fear of abandonment is also highly related to the obvious fluctuations and mood disorders of BPD. As what has mentioned before, the fear for being abandonment may be a result of self-other mergence that individuals with BPD may not be able to build up their own self-identity but recognize it through others' judgments, resulting in a sense of cognitive dissonance, which refers to a discomfort that results from having opposing ideas at the same time, and it typically causes people to devalue contradicting information (Sato et al., 2024; Masataka and Perlovsky, 2012). Unresolved cognitive dissonances may hinder the progress of cognition because every thought connotes some degree of contradiction to other information. The cognitive dissonance is caused by the perceived critics and previously relied positive judgments from the others. This fear leads to several reactions, such as excessive clinging behaviors or pushing others away to avoid the corrupt of self-identity when individuals with BPD have already sensed a negative judgement to them. The fear of being deserted or excluded can lead to behaviors that contradictorily deeply attach to people while also keeping distance from them, making the interpersonal relationship turbulent.

2.4 Positioning

Finally, impulsivity and self-destructive behaviors are common among individuals diagnosed with BPD. Since chemicals such as Orbitofrontal Cortex(OFC) and Dorsolateral Prefrontal Cortex (DLPFC) plays a role in the pathophysiology of suicidality in mood disorders by suggesting that suicidal behavior is linked to personality factors and the activation of OFC and DLPFC to negative emotional cognitive inputs, showing that both personality traits and emotion is related to self-destructive behaviors (Kamimura et al., 2012). These behaviors may often occur in response to overwhelming emotions in order to alleviate feelings of emptiness or regain control in situations where they feel emotionally out of control. These behaviors are believed to be efficient from the perspective of individuals with BPD as they provide a sense of relief that cannot be easily found in other responses. However, due to the negative effect of these self-destructive behaviors on relationship, it is also believed that these behaviors are also used as methods to condition others, being harmful to people who has close relationship with BPD-diagnosed individuals.

3 SCHEMAS AND THEIR ROLE IN PERSONALITY DISORDERS

3.1 Definition

Schemas are cognitive frameworks or concepts that influence how individuals perceive and interpret external information. While schema of normal person shared basic commons on perceiving others' mood, attitude, and intentions when socializing, individuals with BPD may not interpret this information in the same way as them. The high dependence on others evaluation makes individual with BPD more sensitive to the difference between people's ideas than to the overall reasoning. These schemas may develop through repeated intense interactions with the environment, particularly during childhood. This may be because the neuroanatomical changes are influenced by environmental factors in diagnosis pf BPD, including trauma experiences, such as parental loss, neglect, abuse, or reject (Economou and Chafos, 2014). Additionally, as numerous aspects of forgiveness of individuals with BPD are significantly lower than in individuals without this symptomatology, which indicates the level of forgiveness is related to BPD symptoms, childhood trauma is a critical factor that can lead to the low level of forgiveness as they may receive low level of forgiveness during their childhood or may feel too hard to forgive events happened in their childhood and thus expand this behavior to other aspects (Sansone et al., 2013). Conditioning may exist in shaping these schemas that these people

may be punished for building up independent ideas or holding different points of view from the groups. While schemas can be adaptive, benefiting the efficiency of personal interpretation of the world, they can also become maladaptive and contribute to psychological disorders when they become rigid and distorted.

3.2 Cognitive Schemas' Role in BPD Symptoms

Generally, schema has its significance for people since it allows people to take shortcuts in interpreting the vast amount of information. This is because by using a schema, people can process information through several fixed ways. Moreover, since schema provides a fixed way to help understanding the role of oneself and the relationship between one and the environment, cognitive schemas play a critical role in shaping how individuals perceive themselves, others, and the world around them. For individuals with BPD, their schemas are distorted, particularly in recognizing their relationship with others in the environment. Negative beliefs, including the sense of unworthy of love and sense of being deserted, form the foundation of these distorted perceptions and can lead to maladaptive emotional and extreme behavioral responses, since they act as filters through which people process information. When these filters are distorted, they lead to problematic perception that put a person in a horrifying situation although others in the same environment probably will not sense it. According to functional schema theory, schema is dynamic, ongoing and continuously evolving (Iran-Nejad and Winsler, 2000). This characteristic of schema may also reinforce itself. For instance, the distorted schema led to fear of abandonment, while fear of abandonment may cause a depressive social environment which drives people away. As the schema responds to the environmental changes, the belief of being abandoned of the schema would be reinforced. To be more specific, a person with BPD may believe in a helpless situation where he is placed

into an environment that he deserves no assistance and is also no able to do anything with his own effort. In this case, he interprets every socialization as a rare opportunity to solve the predicted problems other than nothing. This leads to the constant extreme emotions of them despite the environment, making changes in environment not effective unless the internal cognitive model has changed.

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4 THE FORMATION OF COGNITIVE SCHEMAS IN BPD

4.1 Early Life Experiences

There are quite a lot of factors that can influence the development of schema, including environment, events, and neuron development. While neuron development is highly related to neuron plasticity which help to rebuild neuron pathways and adjust to the environment, it is reasonable to conclude that the environment and experiences lead to the adjustment occurred in neuron pathways and thus contribute to the development of schema. Focusing on experiences lead to distortion in schema, tracing back to early life is necessary to find the causation relationship between events and the outcoming distortion. Childhood trauma is an essential type of these experiences. For instance, parents who have a neglective parenting style may have low expectations and provide low levels of assistance to a child. This may lead the child to self-identify as a person who is worth little due to his limited ability, which is the idea conveyed by the attitude of his parents. In addition, children in this circumstance are easily

exposed to events where they are not able to improve anything with their own effort, leaving them a necessity to rely on others. In this case, as schema is gaining others' appreciation becomes a survival strategy instead of a mental pursuit, causing them to feel an extreme sense of helplessness when these supports are absent, shaping the schema , since in functional schema theory, mental functioning is believed to be caused by ongoing awareness, as nervous system continuously update the peripheral and focal awareness, forming a organized self-model which is referred to the term "schema" (Iran-Nejad and Winsler, 2000).

These maladaptive schemas are reinforced over time through continued negative experiences in relationships. While individuals with BPD struggle to maintain stable interpersonal connections, their schemas of reliance on others and worthlessness are continually activated and reinforced since they consider normal reactions in communication as hints of being abandoned. Since disagreement widens the distance with others, the absence of attachment between them means that they are less likely to gain assistance. These assistances 122 are believed not to occur among normal social relationships. With this leading to the helplessness, which is also a result of the distortion in schema. These distorted schemas thus become self-perpetuating, as individuals with BPD interpret events through the lens of their deep-rooted cognitive patterns.

4.2 Development of Certain Schemas in BPD

In addition to childhood experiences, cognitive biases also play a significant role in the formation and reinforcement of schemas in BPD. For instance, all-or-nothing thinking, which refers to the belief that a person is either completely good or completely bad. Although this belief may have its benefits like helping the person with BPD to avoid every people that are believed to potentially be threatening to himself, this belief divides the majority in an environment into a completely bad category, leaving the

person with BPD himself in a lonely situation, which reinforce the sense of being deserted.

Moreover, emotional reasoning is also a critical factor. Since to some extent, people with BPD may be able to sense internal natural reaction to the happening events as normal people but fail to interpret the underlying meaning of their sense, they usually repress it until they cannot keep ignoring it. This leads to a situation where they express these senses just to make them feel more self-consistent, instead of coping with it, leaving the events themselves unsolved, making the overall situation worse. What's more, if they feel abandoned, they may assume that abandonment is truly happening which contemporarily makes them feel better since it proves the validity of their judgement, however, placing them to a nonexistent situation which thus has no solution, reinforcing their belief in their weakness. This leads to impulsive actions to prevent abandonment, reinforcing the maladaptive cycles of behavior and further entrenching negative cognitive schemas.

4.3 Cognitive Biases in BPD

Catastrophizing is another cognitive bias, which involves anticipating the worst possible outcome in any given situation, no matter how unlikely it may be. This may be resulted from the frequency of being placed into trouble in their previous experience that they have to prevent any possibility that they may get into them again. However, as preventing catastrophic events has its costs, including efforts and materials, and even the peaceful mood since catastrophic events are something worth being anxious about. In this case, in physical aspect, person with BPD may continuously stay in a situation lack of things as they devote them into a nonexistent problem, while in mental aspect, they are constantly being anxious and has less chance to realize its invalidity due to the self-fulfilling prophecy, leading the cognitive schema to be reinforced as the predictions are correct compared to the consequences.

5 THE FORMATION OF COGNITIVE SCHEMAS IN BPD

Since cognitive schemas play a critical role in the BPD symptoms, featuring in deep-rooted belief systems that shape the way individuals perceive themselves and the environment around them. These maladaptive schemas distort thinking and behavior, leading to the symptoms of BPD, including fear of abandonment, unstable self-image, and impulsive, self-destructive behaviors.

5.1 Fear of Abandonment

One critical symptom of BPD is fear of abandonment. This symptom may be caused by beliefs that the individual with BPD himself is dependent on help provided by others and that it would be safe only when the individual is deeply connected with a group. However, individuals with BPD also hold a pervasive belief that relationships are unstable and will inevitably end which are hinted by previous disagreements and conflicts that are usually considered as normal and inevitable in relationships of individuals without BPD. What's more, one of relevant symptoms is an intense fear of being rejected, which may lead to social exclusion and is one of their social cognitive impairments (Sato et al., 2018). In this case, since individuals without BPD may not try to avoid disagreements, these disagreements may strengthen the prediction of being abandonment of individuals with BPD, leading to constant sense of fear. Moreover, the sense of fear is also related to their self-cognition including unworthy, unlovable, and inadequate, with which the individual deserves to be abandoned. Their self-cognition is highly tied to external comments and criticisms, for instance, from parents, teachers, and peers. This may be related to the self-other mergence of BPD that their cognition may easily be confused with others. In this case, faced with perceived signs of rejection—no matter how minor or unintentional—this schema not only triggers intense emotional distress and desperate attempts to prevent abandonment, such as clinging behaviors or outbursts, but also strengthen the negative evaluation of the individual or confuse his previous self-cognition with contradictory comments, leading to the negative beliefs of themselves and causing the fear of being abandoned. These beliefs can also paradoxically strain relationships, reinforcing the individual's belief that they are destined to be abandoned.

5.2 Unstable Self-Image

Unstable self-image complicates BPD symptoms as well. Since individuals with BPD do not have or be highly unconfident with their personal perceptions, they have self-other mergence that leads them to build their perception of themselves and the environments on other's behavior or claims. Since people's criticisms on a single item varies from different dimensions and is influenced by their previous beliefs, cognition-level, culture background, and many other factors, the individual with BPD can receive contradictory perceptions or variable negative criticisms. The former ones reinforce their lack of confidence in personal judgement as they fail to do so when believing in all contradicting claims, while the latter ones build up their negative self-evaluation since they are corresponding to their experiences. With the self-other mergence, these two factors contribute to the unstable image of individual with BPD.

5.3 Impulsivity and Self-Destructive Behaviors

Finally, impulsivity and self-destructive behaviors are caused by the temptation of individuals with BPD to solve problems when they experience frustration. These impulsive behaviors serve as coping methods to escape from overwhelming emotions or to prove distorted beliefs which causes cognitive dissonance. In this case, doing impulsivity behavior is temporarily beneficial for emotions of them as these harmful behaviors corresponded to their negative cognition, reducing certain level of cognitive dissonance, and distract them from self-criticizing during the overwhelming emotions.

6 CONCLUSION

BPD's certain syndromes including fear of abandonment, unstable self-image, and impulsivity may be resulted from early life experiences including childhood trauma or latter huge events that undergoing a deep doubt on themselves. These events contribute to the syndromes of BPD through affecting the schemas of their way to interpretation. As schema is a concept of the cognitive framework that affect how people percept and interpret the received messages from external environment, distortion of schema may lead to unique focus on certain information while ignoring other main points and thus cause the syndromes. Schema may be affected by childhood trauma by providing unrelated negative feedback on random behaviors, leading to abnormal level of need for attachment and afraid of failure in interpersonal socialization. While cognitive bias in schema contribute to the syndrome through the all-or-nothing thinking, as this way of thinking leaves individuals with BPD in a lonely situation that reinforce the sense of being abandoned. Catastrophizing in schema lead to self-fulfillment prophecy of the predicted negative outcome by putting the individual consistently in an anxious or disappointed mood. The formations of these schema is also discussed. While the afraid of being abandoned may be resulted from the belief that connection with the group brings safety, the unstable self-image may be resulted from the self-other mergence, and the impulsivity and self-destructive behavior be resulted from the temptation to solve cognitive dissonance caused by the contradictory belief and the facts. However, since the discussion is mainly based on the interpretation on previous findings and reasoning, the lack of experiments supported data may result in an incomplete explanation of each cases. It may be reasonable to believe that believing in an ambiguous self-image or build their image based on others' reaction has a temporary benefit that make patient feel necessary to do that, and leave a cognitive schema that strengthens certain negative schema and then become a long-term cognitive schema. Several cognitive therapies are effective, including CBT, DBT, Schema Therapy, but there are still challenges. As cognition can be spread, leaving personality disorders.

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