

Influence of Gender Based Brain Differences in Teenagers' Psychology

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Abstract - Teenagers live in an exhilarating season of transition from childhood to adulthood. They face growing pressure to be responsible and trust worthy, while they grapple with a few issues. They have a deep need to define themselves to clarify who they are and what they stand for. During the teen years, their brain is getting reshaped and reconstructed. A number of structural elements in the human brain differ between male and female. In emotional processing, there are differences between male and female brains activities. These differences make psychological influence on their physical, mental and social concerns.

Index Terms - adolescence, brain, gender, psychology

I. TEENAGERS' PSYCHOLOGY

Psychology is the study of mental processes and behaviour. By learning the basics of behaviour and human mind, people gain a greater understanding of themselves and others. It is a source of fascination or curiosity for many people. For some, an interest in psychology is fuelled by a desire to pursue a carrier in the field.

Focussing more on teenagers, they live in an exhilarating season of transition from childhood to adulthood. Adolescence is the time of great change of teens; discover their unique personality traits and skills. It is important for teenagers to develop an identity and independence. At the same time, they face growing pressure to be responsible and trust worthy, while they grapple with issues like sexuality, drug use and peer relationships. Adolescent psychology seeks to understand teens and help them make transition from child to adult[1].

Being a teenager is hard. They face life altering exams, when their brain is going through huge changes. They have a responsibility to manage their own behaviour, by understanding the changes and challenges they face.

Abnormal teens will have mental problems like depression, suicidal thoughts & attempts, self-mutilation, body dysmorphic disorder, eating disorder, anxiety disorder, mood disorder, schizophrenia, Attention-Deficit / Hyperactivity Disorder (ADHD) / Attention-Deficit Disorder (ADD) and autism.

II. CHANGING BRAIN MEANS CHANGING IDENTITY

During the teen years, under the influence of massive new hormonal messages, as well as current needs and experiences, the teenagers' brain is being reshaped and reconstructed. Information highways are being sped up by myelination, some old routes closedown (pruning) and some are rerouted & reconnected to other destinations. This reconstruction explains why the personality and stability that were just a year or two before adolescence suddenly bound new perspectives and reactions[2].

Because of all the changes occurring in the brain as well as in their social and academic world, teens have a deep need to define themselves to clarify who they are and what they stand for. As they are losing their pre adolescent identity, they are desperate for a new identity. The search can have constructive as well as destructive effects in it. Often the new identity is influenced by their peer group for better or worse. Because, the teens do not know clearly what they want or what they can do, they like to try many different things. This helps them discover what works for them, what feels right and who they are becoming.

III. DIFFERENCES BETWEEN MALE AND FEMALE BRAINS

It is no secret that boys and girls are different. The differences between genders however extend beyond what they can see. Research reveals that there are major differences between male and female brains. Scientists have discovered approximately one hundred gender differences in the brain and the importance of these differences cannot be overstated [3].

A. *Structural Dimension*

A number of structural elements in the human brain differ between males and females. The word 'structural' refers to actual parts of the brain and the way they are built, including their size and / or mass.

1. Females have a larger hippocampus i.e., human memory centre. They also have a higher density of neural connections into the hippocampus. As a result, girls and women tend to input or absorb more sensorial and emotive information than males do.
2. Their brains are developed with different hemispheric divisions of labor. The right and left hemispheres of male and female brains are not set up exactly the same way.
3. Females tend to have verbal centres on both sides of the brain, while males tend to have verbal centres on only the left hemisphere. Males have only fewer verbal centres and also have less connectivity between their word centres and their memories or feelings.
4. And hence, females tend to use more words or have more interest in discussing or describing an incident, story, person, object, feeling, emotions or place, whereas males do lesser.

B. Emotional Dimension

During this tumultuous time, teens look into their peers for emotional support. They begin to have more conflicts with parents until late adolescence, when they may become closer to them again. They specifically get closer with same sex friends as they experience more emotions and become more independent from their parents.

On the subject of emotional processing, there are differences between male and female brains activities worth looking at.

1. The female brain gets far more natural blood flow throughout at any given moment. Because of a higher degree of blood flow in a concentration part of the brain called the *cingulate gyrus*, it will often ruminate on and revisit emotional memories more than the male brain.
2. Males, after reflecting more briefly on an emotive memory, tend to analyse it somewhat, then move onto the next task. During this process, they may also choose to change course and do something active and unrelated to feelings rather than analyse their feelings at all. Thus, observers may mistakenly believe that boys avoid feelings in comparison to girls or move to problem-solving too quickly.

These natural design differences make the male and female brains think differently. Understanding gender differences from a neurological perspective not only opens the door to greater appreciation of the different genders, but also calls into question how parenting, educating and supporting children from a young age[3].

IV. FINAL THOUGHT

Adolescent psychology seeks to understand teens and help them make transition from child to adult. Teenagers have a responsibility to manage their own behaviour, by understanding the changes and challenges they face. Reconstruction of brain during the teens changes their personality and stability to new perspectives. Differences in the brain structure and process with respect to the gender make the teenagers think and act differently.

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