On Thursday, November 18th, Dr. Shiraz Butt spoke to a packed room at the Glenbard Facilities Building about recent findings and current trends in child psychiatry. His presentation was the latest in Glenbard District 87's In Touch parent education series, made possible by a generous grant from the Cebrin Goodman Center.

Dr. Butt is a child and adolescent psychiatrist affiliated with Central Dupage Hospital. He's also the father of two boys. The audience comprised both parents seeking personal guidance as well as professionals attending for educational purposes.

Dr. Butt's presentation focused on some of the enormous gains made over the past decade in the psychiatric diagnosis and treatment of children. He attributed much of the progress to advances in three areas -- imaging technology, genetics, and psychopharmaceuticals -- each of which he summarized in interesting detail.

More accurate diagnosis and effective treatment of children and adolescents is extremely important because an increasing number of youth are being diagnosed with psychological disorders. Dr. Butt cited one study of a thousand randomly selected children. It found that one in five kids met the criteria for at least one, and sometimes multiple, disorders.

In the past, clinicians relied on a Classification Model of diagnosis and treatment, whereby diagnoses would be rendered solely on the basis of symptoms. This one-dimensional approach was not only limiting, it was frequently inaccurate. Dr. Butt said if you asked five clinicians to diagnosis a patient based on this model, you'd likely get at least one conflicting response.

Over the past decade, however, clinicians have been moving toward a more multi-dimensional approach to diagnosis and treatment. Disorders are increasingly thought of as falling within a spectrum rather than being absolute. This approach has many benefits, including helping doctors identify patients who suffer from more than one disorder. Within specific disorders, clinicians are recognizing different dimensions to both the disease itself and the resulting behavior.

**Mapping Brain Circuitry with Imaging Technology**

The first major contributor to a more profound understanding of psychological disorders is the development of real-time imaging technologies. Armed with new imaging tools, researchers are able to map the circuitry of the brain and correlate disorders with brain function. Not only is this proving invaluable for understanding disorders that have already manifested in behavior, but it also may allow clinicians to detect disorders that have not yet manifested, thereby enabling doctors to proactively treat patients before they become symptomatic.
Dr. Butt used the example of attention-deficit/hyperactivity disorder (ADHD) to illustrate the value of imaging. While observing real-time brain function, researchers asked children with ADHD to move from a quiet activity to a more active state. Imaging revealed a significant delay in their cognitive ability to make that transition compared with a healthy control group.

Findings such as these help parents, teachers, and doctors to better understand behavior. Whereas before, kids with ADHD might be seen as being disobedient or not paying attention, doctors now understand that there is an underlying physical explanation for their slow reaction time when going from rest to activity. Parents and teachers can adjust their methods and expectations accordingly.

Related to imaging, Dr. Butt also discussed advances made in understanding the effects of psychological trauma to the brain. Conditions such as Post-traumatic Stress Disorder, for instance, are shown to result from actual physical changes in the brain. The brains of patients suffering from PTSD often have developed an enlarged emotional center and a shrunken cognitive center, which inhibits them from fully controlling and understanding their emotions.

**Understanding the Interplay of Genetics and the Environment**

Advancement in genetics is the second major contributor to a deeper understanding of psychological disorders. Thanks to the Human Genome Project, researchers are now able to correlate mutations in specific genes with physical disease, such as Muscular Dystrophy. However, Dr. Butt explained, that genetic connection appears to be much less direct and more complicated in psychological disorders.

First of all, there appears to 12 to 14 genes associated with psychological disorders. Second, it's not a mutation of one of those genes that causes a disorder; it's more likely the expression of a gene, or even a group of genes.

Environmental factors appear to play a significant role in how genes express themselves. For example, some children have been found to have the genetic makeup for ADHD, yet the disorder never manifests. Dr. Butt said environmental factors, such as pre- and post-natal care (e.g. nutrition and smoking) and familial influences (e.g. divorce), could play a role in determining if and how a disorder manifests.

Dr. Butt also discussed early research suggesting a connection between the mother's state of mind during pregnancy and her offspring's psychological health. For instance, if a mother is under extreme stress during her pregnancy, she releases hormones that may affect the brain of her unborn child, causing specific stress responses to be transmitted to her offspring. That effect may become a permanent part of the child's genetic makeup, and would therefore be transmittable to future generations.
Embracing Psychopharmaceuticals with Caution

The third major contributor to advancement in the understanding and treatment of psychological disorders is the rapid development of psychopharmaceuticals. While having a wider variety of more effective drugs to choose from is a positive, Dr. Butt cautioned that there are a number of troubling trends.

For instance, he said, psychopharmaceuticals are being prescribed to children at a rate that is five to seven times that of the past decade. Dr. Butt attributes this increase to at least three developments: first, the exploding number of new drugs made available over the past ten years; second, increased drug advertising, especially to the general population; and, third, the "surgical strike" quality of some of the newer, second-generation psychopharmaceuticals.

Second-generation drugs target specific symptoms, versus their broader-based first-generation versions, so doctors tend to be more comfortable prescribing them. However, these new drugs have yet to be fully studied in younger populations, and there is evidence that some drugs may cause disease such as obesity and diabetes in young patients.

A related trend is the prescribing of more than one drug, which Dr. Butt referred to as polypharmaceuticals. Since newer drugs are so specific to the symptoms they treat, doctors are more likely to prescribe more than one drug at a time. Often, however, these newer drugs have not been studied in combination, particularly in young children.

To better manage psychopharmaceuticals in children, Dr. Butt suggested taking metabolism into account when determining dosage. The slower a child's metabolism, the more side effects they are likely to experience.

In closing, Dr. Butt noted that, although tremendous progress in diagnosing and treating psychological disorders has been made over the past decade, there's still much more work to be done. He specifically hopes to see more longitudinal studies designed to better understand critical periods of brain growth. He is especially interested in studies looking at "ages of onset", which tend to be 11 for mood disorders, 13 for social disorders, and 15 for substance abuse.

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