

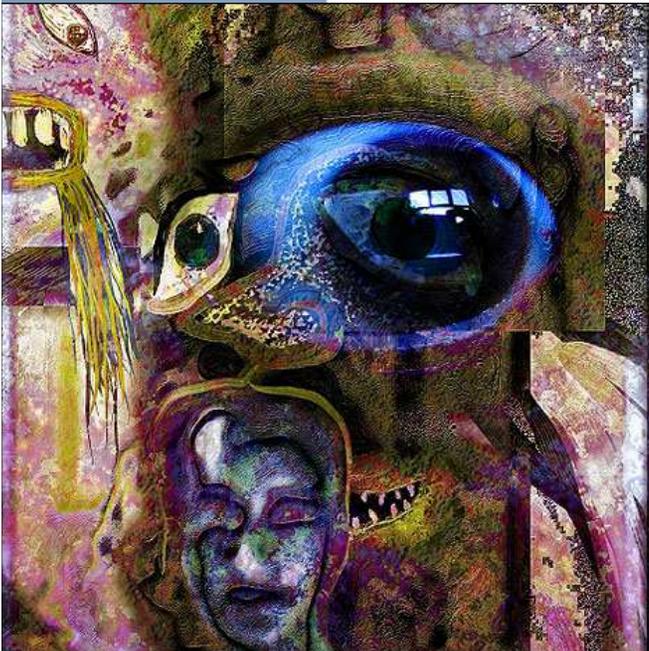
Paranoid Schizophrenia

Schizophrenia

- Typical onset
 - Late adolescence or early adulthood
- Early onset Schizophrenia
 - Diagnosed by age 8-10
- Late Onset
 - After 45
- Incidence of all schizophrenia is 1% worldwide with an estimated 24 million worldwide (WHO, 2002).
- Positive symptoms
 - Delusions
 - Hallucinations
 - Thought disorder
- Negative symptoms
 - Flat affect
 - Lack of motivation
 - Impoverished speech

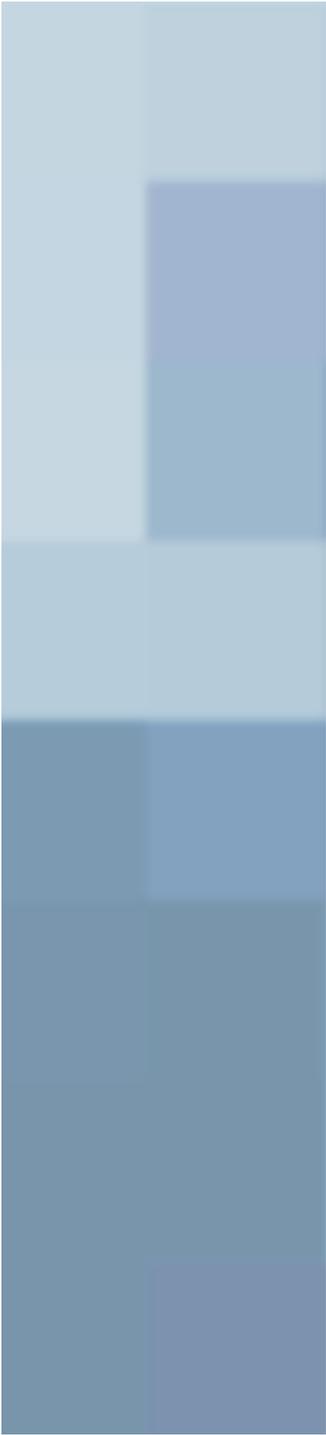
Main Symptoms of Schizophrenia

- Three general categories
 - Disorganized thinking
 - Disturbed perceptions
 - Inappropriate emotions and actions



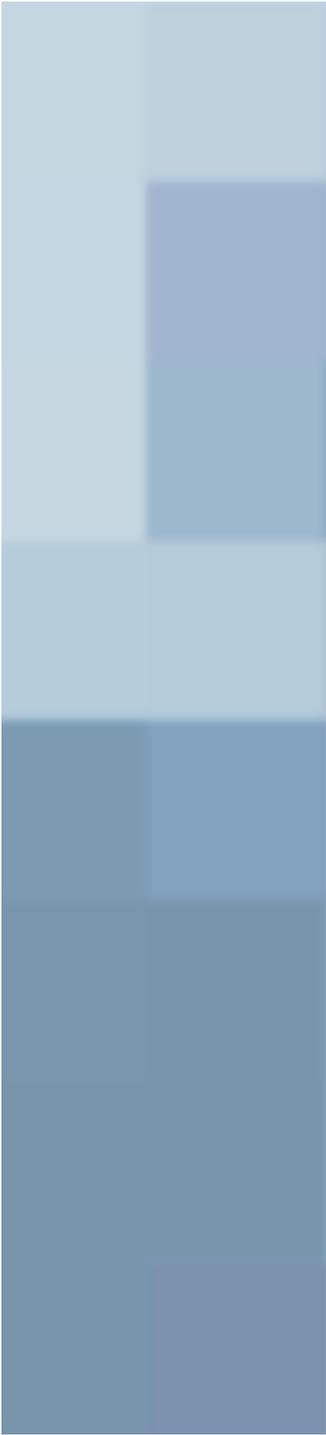
Disorganized Thinking

- Example: Said aloud to no one in particular: “This morning, when I was at Hillside [Hospital], I was making a movie. The X-ray technician was Peter Lawford. The security guard was Don Knotts. That Indian doctor in Building 40 was Lou Costello. I’m Mary Poppins. Is this room painted blue to get me upset? My grandmother died four weeks after my eighteenth birthday.” (Patient Maxine, as cited in Myers, 2004).
- Delusions
- Some people with schizophrenia speak with a “word salad.”
 - “a little more allegro in the treatment;” “liberationary movement with a view to the widening of the horizon” will “ergo extort some wit in lectures” (Myers, 2004).
 - Possibly due to reduced inhibition of distracting stimuli (thoughts included).



Disturbed Perceptions

- Hallucinations
 - Usually auditory, negative, and insulting
 - Intrusive
 - Often very disturbing and frightening to the people
 - Can have visual, tactile, olfactory, or taste ones too



Inappropriate Emotions and Actions

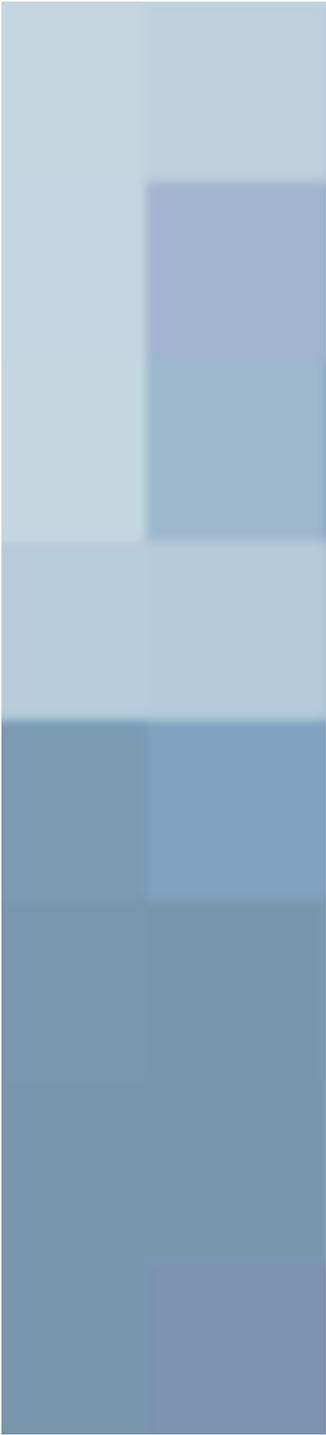
- Flattened affect
- Inappropriate affect (e.g., laughing while recalling a death)
- Emotional lability
- Sometimes erratic or repetitive motions (“The Preacher”)
- Catatonia

Types of Schizophrenia

- Catatonic – absences or peculiarities of movement
- Disorganized – thought disorder and flat affect
- Paranoid – Mainly delusions and hallucinations
- Residual – only mild positive symptoms
- Undifferentiated – doesn't meet criteria for other groups
- Onstad et al. (1991) factor analyzed the symptoms of 107 patients. There were no significant clusters of symptoms (i.e., did not replicate the DSM subtypes). The non-paranoid / paranoid differentiation was not significant either.

Paranoid Schizophrenia

- “The essential feature of the Paranoid Type of Schizophrenia is the presence of prominent delusions or auditory hallucinations in the context of relative preservation of cognitive functioning and affect. Symptoms...of the Disorganized and Catatonic Types...are not prominent” (DSM-IV-TR).
- Delusions are usually persecutory or grandiose
 - Often believe they are being controlled by something (most common) or that they control things like the sun rising or whether hurricanes hit land
- Hallucinations are usually related to the delusional theme
 - Threatening, obscene, accusatory, or insulting
 - Often 2 or more voices (e.g., “the harasser”; “the joker”; “the machine”)
- Onset usually later than catatonic or disorganized – implies better outcome
 - Often well-established social networks
- Usually higher cognitive, emotional, and behavioral functioning than other types
- What are the people like?
 - Tense, guarded, suspicious, “paranoid”, sometimes hostile and aggressive
- Patient M.T. stories



Causes and Effects of Schizophrenia

- Infections
- Geography/population factors
- Gender
- Genes
- Cultural and socioeconomic
- Stress
- Neurological abnormalities

Infections

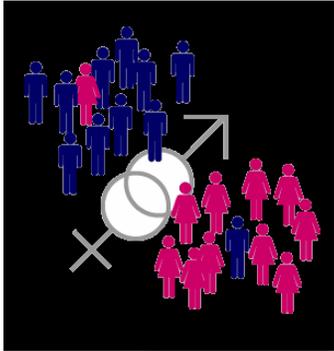


- Northern Hemisphere – higher rates in people born in winter to early spring
- Southern Hemisphere – higher rates in people born in winter (July-Sep)
- Hsieh et al. (1986) only found the winter difference in male patients with paranoid schizophrenia
- Torrey et al. (1997; 2002) demonstrated a 5 to 8% risk increase for winter births
- Increased rates in people born during flu epidemics
- Children of mothers with influenza during second trimester have higher rates (1% prevalence to 2%)

Geography and Population Factors



- Historically higher rates in the NE and West – effect not as strong anymore
- Higher rates in cities with more than 1,000,000 (likely related to viral infection hypothesis)
- Some evidence of higher rates in immigrant populations (likely SES or stress related)

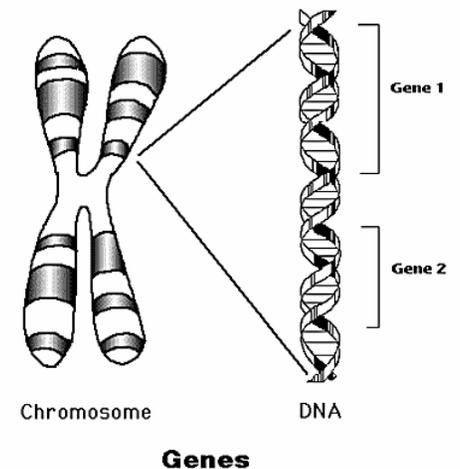


Gender

- Men have an earlier onset than women
 - Women have a bimodal onset with peaks in their 20s and early 40s
- One study demonstrated within subtype age of institutionalization gender differences only for paranoid schizophrenia (Salokangas et al., 2003)
- At least two studies (Robins & Regier, 1991; Kessler et al., 1994) demonstrate higher rates of schizophrenia in women than men (1.7% versus 1.2%)

Genes

- Evidence of strong genetic link
- If one identical twin has schizophrenia there is a 50% lifetime risk for the other twin, compared to a 10% risk for fraternal twins (Gottesman, 2001)



Cultural and Socioeconomic

- Industrialized countries – more people with schz. in low SES
 - *Downward drift hypothesis*
 - *Social causation hypothesis*
- Gallagher et al. (2006) showed a link only between *deficit schizophrenia* and SES (controlling for race)
- Neighbors et al. (2003) – Eur. Am. more likely to be diagnosed with bipolar and Afr. Am. with schizophrenia
- Barnes (2004) – Afr. Am. inpatients 4X more likely to receive schz. Diagnosis than Eur. Am.
- Using 10 case summaries, 58 Japanese and 61 European psychiatrists provided diagnoses of the patients:
“*Hebephrenic* [disorganized] type (F20.1) was more likely to be diagnosed by Japanese psychiatrists, while the *paranoid* type (F20.0) was more frequently diagnosed by European psychiatrists. Japanese psychiatrists take into account the patient's age at onset and the clinical course of the disease in identifying the subtype, while European psychiatrists tend to focus on the presenting symptoms, particularly paranoid symptoms” (Kudo et al., 1999).



Stress

- Stress is often a main contributor (stress-diathesis) but viewed as only affecting the timing of onset and severity of disorder
- Patient J.B. onset story
- Kim (2005) – John Nash’s social relationships studied: “Nash's mistress and wife, appear to have suffered the most by Nash's narcissistic and paranoid schizophrenic tendencies due to his noncommittal and disrespectful attitudes.”
 - Schizophrenia causes a lot of stress on the people around the patient, which therapists should also address



Neurological Abnormalities

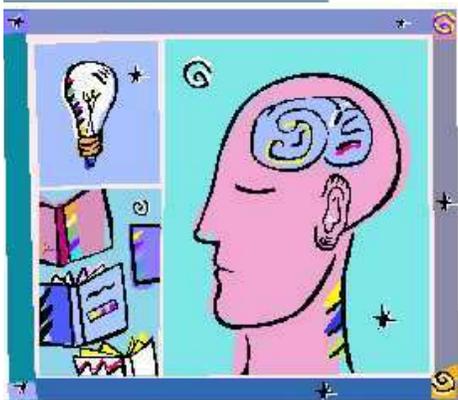
- Brain abnormalities: *hippocampus* and *fornix* (Kuroki et al., 2006), *total brain and ventricle volume* (Steen et al., 2006), *left posterior cingulate, left inferior frontal sulcus, right sylvian fissure, and left and right halves of the third ventricle* (Leonard et al.), *striatum* (Vink et al., 2006), *insula* (Makris et al., 2006), etc.

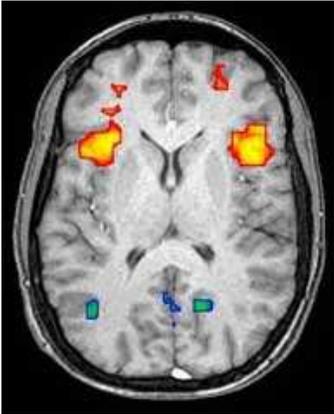
More About Brain Abnormalities

- Usually smaller brains and larger ventricles
 - Tissue loss in adolescence of early-onset Schz. (2 short animations)
- Smaller frontal lobes
 - Smaller prefrontal cortex (complex reasoning)
 - Also less activity in dorsolateral frontal cortex (inability to inhibit irrelevant stimuli such as persistent hallucinations)
 - Excessive skin-conductance arousal responses were elicited in the schizophrenia subjects (paranoid subjects had significantly more activation than non-paranoid schz. subjects too), but there was an associated reduction in amygdala/medial prefrontal activity when shown faces exhibiting fear (Williams et al., 2004).
 - Summary: paranoid schz. showed more physiological activation but less brain activation – disconnect between autonomic and CNS processing.
- Superior temporal gyrus (hearing and language) usually affected (auditory hallucinations) (Taylor et al., 2005)
 - Left anterior STG volume has a significant inverse correlation with psychotic symptoms (Kim et al., 2003)
 - Patients have a significantly smaller left anterior STG; the volume of this region negatively correlates with the severity of hallucinations (Rajarethinam et al., 2000)
- Not only is the hippocampus smaller but also the pyramidal neurons in it are disorganized
- The worse the symptoms of schizophrenia, the worse the brain abnormalities and vice versa

Cognitive Performance

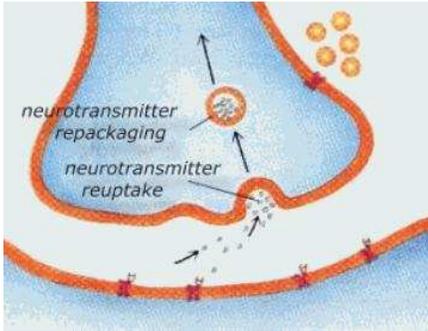
- Attention, memory retention, problem-solving, intelligence, motor impairments (in schz. as a group)
- Subjects with *paranoid schizophrenia* consistently show superior performance (on the WAIS-R and Mattis Dementia Rating Scale) compared to subjects with *nonparanoid schizophrenia* (Badgett et al., 1999)
 - Controlled for medication, substance abuse, and hospital length of stay
- Patients with *paranoid schizophrenia* performed worse on the SCWT (Stroop), those with *nonparanoid schizophrenia* performed worse on the SDMT (symbolic digit modalities test) (Chan et al., 2004)
 - Different aspects of attention affect in different subtypes





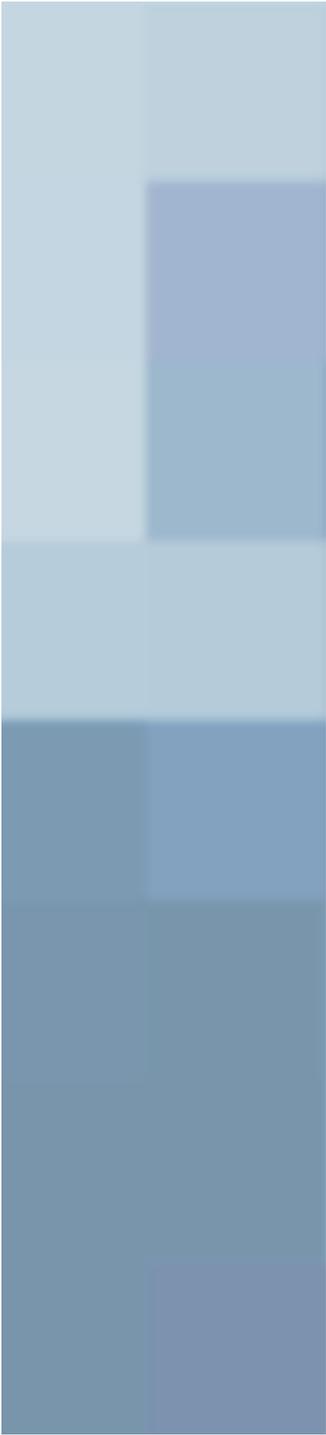
Functional Abnormalities

- Using ERP – “P300 amplitude when viewing a photograph of a smiling baby was the smallest of three photographs for healthy subjects and *paranoid type* patients with successively greater amplitudes for neutrality and sadness. However, the P300 amplitude was the smallest while viewing crying photographs and was the largest while viewing a smiling photograph for *non-paranoid* patients” (Ueno et al., 2004)
 - Paranoid and non-paranoid schizophrenics likely process emotional stimuli differently (i.e., evidence that there are differences in cognitive processes for different subtypes of schz.)
- Other EEG research shows that people with schz. are more sensitive to sensory stimuli (larger early evoked potentials) but have a blunted response at higher cortical levels (late evoked potentials are smaller and less activity on fMRI and PET).



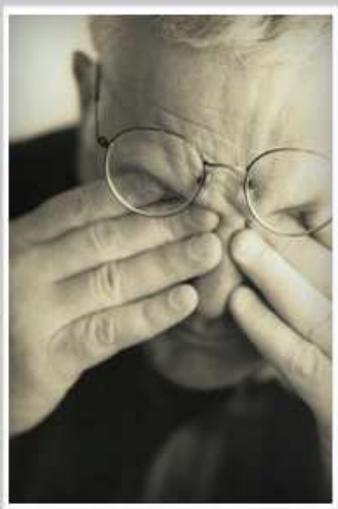
Neurotransmitters

- Increased dopamine levels in Schz.
 - Related to hallucinations and delusions
- Drugs that increase DA (e.g., amphetamines) are psychotomimetic (Kaplan & Sadock, 2003)
- 5-HT overabundance – treatment with drugs may reduce impulsivity and suicide
- Norepinephrine, GABA, and glutamate also involved



Causes and Effects Review

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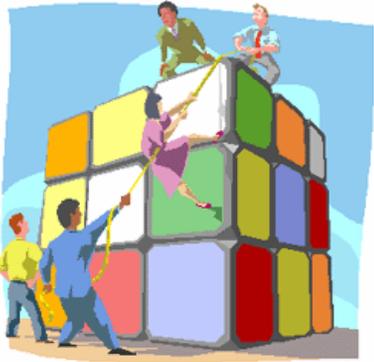
Treatment

- Hospitalization is good for diagnostic, stabilization, safety (to self and other), and care purposes
 - 1 to 1.5 month stays seem to be as good as long-term hospitalizations
- A combination of pharmacological and psychosocial is recommended
- Even with treatment 50% of people with schz. Are severely disabled



Pharmacotherapy

- DA receptor antagonists
 - Reduce DA
 - Reduce positive symptoms, esp. delusions
 - Only work well for about 25% of patients
 - Side effects: parkinsonian-like behaviors (rigidity and tremors) and tardive dyskinesia (i.e., inability to stop moving)
- Atypical antipsychotics (serotonin-dopamine antagonists)
 - Fewer side effects
 - As effective for positive symptoms but also help negative symptoms
 - Risperidone – probably most commonly prescribed. Mild side effects. Good for mild to severe cases
 - Clozapine – very powerful. Good for severe cases. Not usually used as a first drug (i.e., given if other drugs do not work)
- Lithium, anticonvulsants, and benzodiazepines also often prescribed



Psychosocial Treatment

- Social and vocational skills training
 - Work on communication, empathy, displaying interest in others, encouraging recreation
- Work with families to know how to interact with schz. patient and provide appropriate emotional support
- CBT shows limited efficacy. Best with patients with insight
- Therapist needs to provide the most trusting, empathic, and accepting atmosphere possible