

Psychosis & Schizophrenia—I

David Cohen, PhD, LCSW
SOW 6125 – Psychopathology
Spring 2010

Psychosis and schizophrenia

- Psychosis: “loss of contact with reality”— typically accompanied by a delusion (a false belief)
- Historically, classified as *organic* or *functional*
 - **Organic**: caused by physical disease (e.g., neurological, infectious, metabolic) or intoxication (e.g., drugs)
 - **Functional**: no physical causes could be found
 - Schizophrenia considered a “functional psychosis”

Matrix of the concept “schizophrenia”

- Concept emerged within 19th c. prison-like insane asylums in Central Europe
- Asylums held hundreds of people with extremely varied deviances, dysfunctions, and diseases—in radically authoritarian environm.
- Probably why descriptions & definitions of schizophrenia contain a *large range* of behaviors
- Emergence of psychiatry/neuropsychiatry as a discipline willing to take on new problems

(Brief) history of the concept

- *Dementia praecox* (Latin): coined in 1889 by German psychiatrist Emil Kraepelin to name three previously described behaviors:
 1. “Catatonia” (immobility, stupor)
 2. “Hebephrenia” (silly, stilted behavior)
 3. “Vesania typica” (hallucinations and delusions)
- *Schizophrenia* (Greek): coined in 1908 by Swiss psychiatrist Eugene Bleuler; term suggests split between “reasoning” and “emotion”
- Bleuler greatly expanded scope of the concept, and thought most cases were “latent”

From *histopathology* to *psychopathology*—I

- Late 19th c. : explosion of new findings in medicine—focus on the cellular basis of disease (*histopathology*: change in tissue caused by disease)
- Discovery of the biological basis of paresis (third-stage syphilis) at start of 20th C. gave hope that biological basis of schizophrenia would be next

From *histopathology* to *psychopathology*—II

- However, neither Kraepelin, Bleuler or others provided histopathological evidence for dementia praecox or schizophrenia—they simply provided *new names*.
- Bleuler stated that the characteristic symptom was “alteration in thinking.”

Since Bleuler, many ways to group key symptoms of schizophrenia

1. 1910s: Bleuler’s “**Four A’s**”: (loosening of associations, inappropriate affect, ambivalence, autism)
2. 1950s: Schneider’s “**First-rank symptoms**”:
 - Controlled by an external force
 - Thought insertion or withdrawal
 - Thought broadcasting
 - Hearing voices commenting on one’s thoughts/actions or conversing with other voices

3. DSM-III, 1980s onward: Disturbances of a) thought, b) perceptions, c) affect, d) social relations, and e) psychomotor behavior
4. Commonly today:
 - a. **positive** symptoms (hallucinations, delusions, disorganization) — “Type I,” “non-deficit”
 - b. **negative** symptoms (passivity, withdrawal, apathy, mutism) — “Type II,” “deficit schizophrenia”

DSM-IV-TR has 9 diagnoses of *psychoses*

- 2 acc. to **physiological origin**: Substance-Induced Psychotic Disorder, Psychotic Disorder due to a General Medical Condition
 - 2 acc. to some **manifest feature**: Delusional Disorder, Schizoaffective Disorder
 - 2 acc. to **duration**: Brief Psychotic Disorder, Schizophreniform Disorder
 - 1 acc. to **interpersonal dimension**: Shared Psychotic Disorder (*Folie à deux*)
 - 1 acc. to **severity and chronicity**: Schizophrenic Dis.
 - 1 **other**: Psychotic Disorder NOS
- ❖ The meaning of *psychosis* varies across diagnoses

DSM-IV-TR dx criteria for *Schizophrenic Disorder*

1. occurrence of a phase of *active psychosis* that lasts at least 1 month (unless successfully treated)
 - Active phase requires ≥ 2 of the following 5 : delusions, hallucinations, disorganized speech, disorganized or catatonic behavior, negative symptoms
2. presence of *some* disturbance (can be less than active phase) for at least 6 months,
3. marked social or occupational dysfunction
4. exclusion of mood disorders and general medical condition

Differential diagnosis for Schizophr.

- Numerous medical conditions
- Substance-induced delirium, dementia, psychosis
- Mood disorder with psychotic features
- Bipolar disorder
- Schizotypal, Schizoid, Paranoid Personality Disorders
- Mental retardation
- Etc.

5 DSM-IV-TR Schizophr Dis subtypes

1. **Catatonic**: abnormal psychomotor activity, with long periods of immobility or extreme agitation – the least diagnosed form today
2. **Disorganized**: incoherent communication, gestures are disordered, and affect inappropriate
3. **Paranoid**: preoccupation with 1 or more elaborate delusions, auditory hallucinations
4. **Undifferentiated**: presence of psychotic symptoms, but does not meet criteria for 3 previous subtypes
5. **Residual**: has previously experienced an active psychosis, but now only manifests certain relatively minor symptoms (especially negative symptoms)

Diagnosis and Course

- Usually diagnosed for the first time in young adults (~18-22 yrs, slightly older among women)
- Evidence from long-term studies suggest about **25%** will recover, about **50%** show a variable course with long periods of substantial “social recovery”, and about **25%** do not recover or worsen
- Worse outcomes appear associated with **early onset** and prominent **negative** symptoms
- Some authors believe chronicity results from present intervention beliefs/approaches

Incidence/Prevalence of Schizophrenia

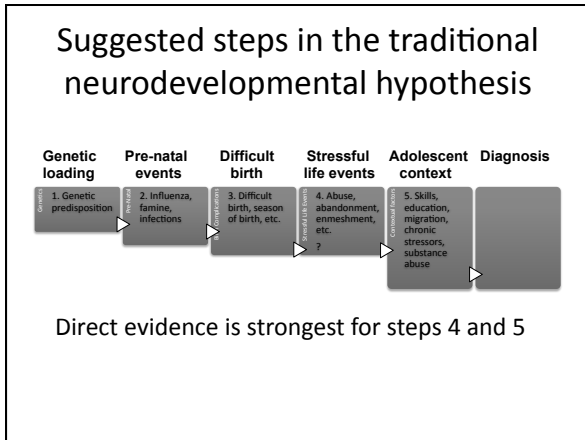
- **Incidence:** how many people are newly diagnosed in a year
1.5 persons per 10,000
- Point **prevalence:** how many people on any given day have the diagnosis
4.6 persons per 1,000
- No gender differences
- Slightly but significantly higher rates for
 - migrants rather than native-born
 - in more developed rather than least developed countries

“Causes” of schizophrenia

- If schizophrenia is a valid entity—Exact causes of are unknown, despite 100 years of intensive research on the problem
- *No consistent physical signs, no physical tests*—Diagnosis rests on the clinician’s evaluation of the history and of verbal or behavioral symptoms and reports
- Many hypotheses throughout the century, from all schools of thought

Neurodevelopmental hypothesis also called “stress-diathesis” hyp

- most popular current explanatory hypothesis of schizophrenia
- Proposes that both genetic **vulnerability** and environmental **stress** eventually give rise to behaviors labeled as “schizophrenia”
- Suggests that period of greatest risk for “schizophrenia” is late adolescence/early adulthood



Critical issues in the three major lines of biological investigation

1. Genetic
2. Anatomical/Structural
3. Biochemical

Genetic studies

- Family studies: schizophrenia, like several mental disorders, appears to run in families
 - The question: is it genetic or environmental?

Latest family study, using a Danish cohort of 2.7 million people

Population	Number of offspring diagnosed with schizophrenia (%)	Researchers' estimate of the "cumulative risk" of schizophrenia by age 52
270 offspring from 196 couples who were both hospitalized for schizophrenia	26 (9.6%)	27.3 %
13,878 offspring from 8006 couples with only 1 parent hospitalized for schizophrenia	473 (3.4%)	7.0 %
2,239,551 offspring from 1,080,030 couples never hospitalized	9,384 (0.41%)	0.86 %

Gottesman et al. (2010). *Arch Gen Psychiatr*, 67, 252-257

Genetic studies—II

- Twin studies: when results are pooled, there is a higher concordance rate of schizophrenia among monozygotic (identical) than dizygotic (fraternal) twins
 - **Concordance rate among identical twins in modern studies** is ~35-40%, compared to ~10-15% among fraternal twins
 - But findings rest on the problematic **equal environment assumption** (that the shared environments of identical and fraternal twins are similar—which is not really tenable). If assumption is rejected, concordance rate differences could be due to environmental differences, not genetic differences.

Genetic studies—III

- Adoption studies: too few, concentrated in Scandinavian countries, findings equivocal, based on stretching “schizophrenia” into “schizophrenia spectrum disorder,” and flawed by **selective placement bias**
- Molecular genetic studies: no replicated findings of *any gene or genes* for schizophrenia
- Researchers in this field hold up the twin studies’ findings as the strongest evidence justifying continued search for genes

Latest development in genetic research: *epigenetic* hypothesis

- Epigenetics is the study of inherited changes in gene expression caused by factors other than the DNA.
- Interest in epigenetics in psychiatry has occurred as a result of:
 1. No or disappointing genetic findings
 2. observations on *transmission of newly acquired traits* downplays direct effects of DNA
 3. Suggestions that genes are overwhelmed by hostile or by compensating environments
 4. Direct evidence on epigenetic influence in psychosis is limited so far, but huge research effort is gearing up

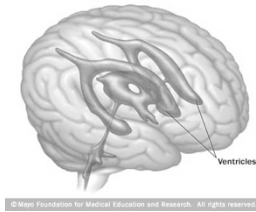
Some implications of the *epigenetic* hypothesis

- Legitimizes consideration of social class and broad adverse circumstances in the genesis of psychosis, in contrast with the bio-bio-bio model
- Example: SES of family of origin linked to “deficit schizophrenia” in recent large study, independently of family history, race, gender

Watson et al. (2008). Social class, family history, and type of schizophrenia. *Psychiatr Res*, 159, 127-132.

Anatomical studies

- About 10-30% of people with a diagnosis of schizophrenia manifest brain abnormalities (such as enlarged ventricles)
- Abnormalities not specific to schizophrenia
- May be associated with prolonged drug treatment



Many other subtle anatomical changes reported

- Many findings of subtle anatomical abnormalities (grey matter reductions) in some first-episode & untreated but esp. chronic patients, in different brain areas
- Cellular concomitants (cell density, size, synapses) of these volumetric changes vary from area to area
- Few if any findings are reliably replicated, no overall hypothesis can integrate all findings

Biochemical studies

- “Dopamine hypothesis”: Excess or overactivity of DA causes schizophrenic symptoms
 - most popular biochemical hypothesis, since 1960s
 - Rests mainly on the observation that all antipsychotic drugs bind to post-synaptic D2/D3 receptors, blocking DA neurotransmission
 - **Little direct evidence that unmedicated patients have overactive DA**

Heinrich’s 3 criteria to establish schizophrenia as a brain disease

- 1) existence as a clinical entity distinct from other disorders
- 2) linkage with an identifiable neuropathology
- 3) the neuropathology’s brain systems have behavioral functions that fit the characteristics of schizophrenia

For each criterion, Heinrichs (2001) concludes that the evidence in the case of schizophrenia is “weak or equivocal.”

Other “causes” and correlates

- Studies in the 1950s/60s reported that parents of a person with schizophrenia had a more critical and intimidating temperament
- “Expressed emotion” (overinvolvement of family members, high levels of criticism) clearly correlated with relapse in many studies
- Child abuse as a causal factor for schizophrenia (see Read, 2005), with a “dose-response” effect?

Some critiques of “schizophrenia”

R. D. Laing, 1960s: a healthy attempt to adapt to an unhealthy family/social situation; could serve as a “psychological renaissance”

- recommended “treatment” in responsive asylums, allowing for regression

Thomas Szasz, 1960s-present: an elastic label used to manage very disturbing/disturbed individuals; the “sacred symbol” of psychiatry

- recommends abolition of involuntary psychiatry, application of rule of law for everyone, increased tolerance toward deviance

Some critiques of “schizophrenia”

Mary Boyle, 2002: original “schizophrenics” suffered from undiagnosed viral encephalitis, and label remains today to describe extremes of behavior (“human breakdown”)

- Recommends application of cognitive approaches, tolerance for deviance

Richard Gosden, 2001: profound mystical experience, necessarily disorienting, unrecognized and stigmatized in today’s society

- Recommends small responsive asylums, emphasis on human rights, tolerance for deviance

Boyle’s explanation for continued prominence of biological approach

- The assertion that it’s a biological disorder is continually repeated, and no one asks for proof
- Seemingly meaningful associations with biological variables are continually created
- Non-biological associations are “managed” (e.g., consequential rather than antecedent, for example poverty, abuse)

Critiques from ex-schizophrenic patients

- Causes of “human breakdown”
 1. Trauma
 2. The repression of extreme individuality
 3. The effects of extreme oppression
 4. The labeling of deviance
- Emphasize potential for recovery within a system that allows significant participation from clients themselves
- www.successfulschizophrenia.org

Alternative views gaining some ground

- *Hearing Voices Network*
 - Proposes that many people (10-30% of gen pop) hear voices
 - Part of the spectrum of individuality, not necessarily a harmful deviance
- Gradual popularity of the notion that psychotic symptoms (paranoia, auditory hallucinations, magical thinking, etc.) are present in the general population, on a continuum

Treatments of schizophrenia

- For past 50 years, neuroleptic, or antipsychotic, drugs constitute the most widespread treatment
- Rapidly suppress psychosis by inducing **passivity, indifference, and loss of spontaneous psychomotor behavior**
- Most worrisome adverse effects are **movement disorders**, called extrapyramidal effects (EPS)
 - Experienced by about half of patients
 - Akathisia, parkinsonism, dystonia, dyskinesia

Treatment: “Atypical” neuroleptics

- Aggressively promoted as more effective and less toxic
- Adverse effects: some EPS, significant weight gain (up to 40 lbs/year) and increase risk of developing diabetes
 - FDA warns that older frail patients die earlier
- CATIE study: 1,500 patients, 18-months, by NIMH, compared 4 atypicals and 1 older antipsychotic
 - Most patients (64-79%) discontinued drug due to inefficacy or intolerable side effects or other reasons
- Atypicals cost much, much more money
- About 15 states and federal gov’t are suing makers of antipsychotics for hiding risks of adverse events or unlawful marketing—over \$3 billion paid in fines so far

Controversy over “prodromal” schizophrenia



Sunday, Jun. 18, 2006

Drugs Before Diagnosis?

By Daniel Williams

Experiments, by definition, are a voyage into the unknown. But Melbourne psychiatrist Patri McGorry was tantalized by the idea that psychotic disorders such as schizophrenia have a pre-emerging—and wrecking the lives of sufferers and their loved ones. The theory wasn't McGorry's.

The point of contention was that some 30 subjects in McGorry's trial received as part of their neuroleptics, which have been linked to a host of harmful side effects, including movement disorders and suspected the influence of big pharma and its drive to expand its markets. "This," American counterproductive human experiments on young people I know about "

Other interventions

In Finland and other Scandinavian countries...

1. Extensive coordination of health and social services under a universal health insurance plan
2. Multidisciplinary team that follows each patient until resolution of the disorder, non-drug or minimal drug + family-centered interventions

(see assigned reading: Seikkula, et al, 2006)

Other interventions

- Soteria (1970s): psychosocial, non-drug/ minimal drug alternative to hospitalization for first-episode schizophrenia
 - Small, home-like environment
 - Non-professional staff
 - Supportive, compassionate, tolerant
 - Focus on building relationships and “being with” the individual

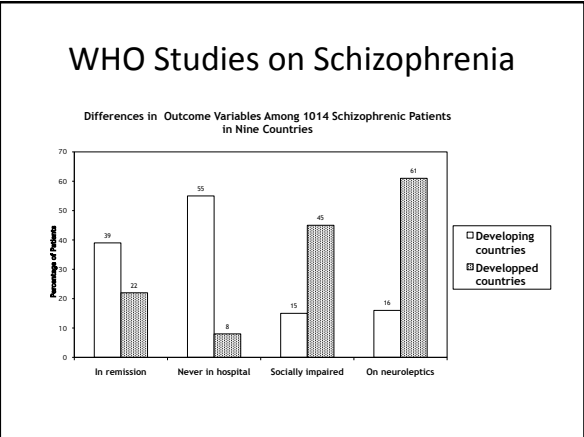
Drug vs non-drug outcomes

- Harrow & Jobe, 2007: prospective, longitudinal (15-year) study found that a larger percentage of schizophrenia patients not on antipsychotics showed periods of recovery and better global functioning
 - See Figure 1: At 10 years, 79% taking antipsychotics had psychotic activity, whereas only 23% **not** taking meds had psychotic activity
 - At 15 years, 64% taking antipsychotics had psychotic activity, whereas only 28% **not** taking meds had psychotic activity
- Attitudinal and personality characteristics associated with subgroup of unmedicated patients with good outcomes

- Healy (2007) summarized changes over the past 50 years around his own hospital in UK: “compulsory detentions into mental illness units have risen 3-fold, admissions for serious mental illness have risen 7-fold, admissions overall have risen 15-fold, suicide rates in schizophrenia are 20-fold higher..., general mortality for serious mental illness has risen substantially.” Healy adds: “all studies find that the death rate of schizophrenic patients increases with the number of drugs given.” His conclusion: “What we are seeing now is not what happens when treatments work.”

WHO studies on schizophrenia

- 12 centres, 1,379 participants, conducted in 1970s-1980s
- Focus on developed and developing countries
- Findings: Outcomes significantly better in less developed countries



WHO studies on schizophrenia

- These results “challenge the view that a highly developed professional care system is the best guarantee for improving the long-term course of schizophrenia. Rather, the integration of patients in a natural social environment, and the restriction of medical interventions to an indispensable degree may provide an optimal care strategy” (Girolamo, 1996, p. 225).

Outcome of schizophrenia by type of treatment, 1895-1992

TREATMENT	NO. OF COHORTS	% IMPROVED
NEUROLEPTIC	175	45.6
CONVULSIVE	101	41.7
NON-SPECIFIC	79	28.9
LOBOTOMY	13	28.1
	TOTAL: 368	AVERAGE: 40.2

Hegarty et al. (1994). *Am J Psychiatry*, 151, 1409-1416
(51,800 patients, 320 studies)

No outcome difference over 100 years

- “...since 1986, the mean likelihood of a favorable outcome has diminished to only 34.6%, or a level that is indistinguishable from that found in the first half of the century” (p. 1412).

- Extremely difficult to group all that “schizophrenia” might refer to in just one concept
- Still not validated as a disease, in the sense of having an established pathology
- Still the engine for yet-to-come reforms in the mental health field
- Undoubtedly, more primarily psychosocial interventions needed—another area for enterprising social workers.