VIOLENT OFFENDING AMONG PERSONS WITH SCHIZOPHRENIA: FROM FACTS TO POLICY

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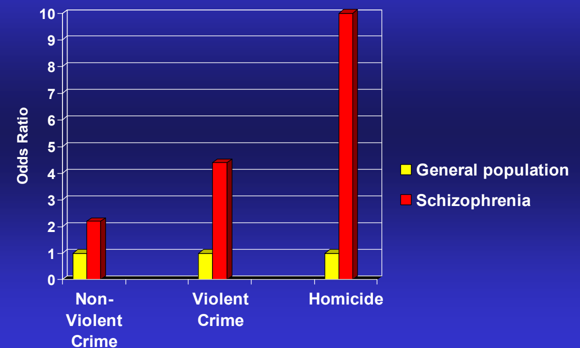
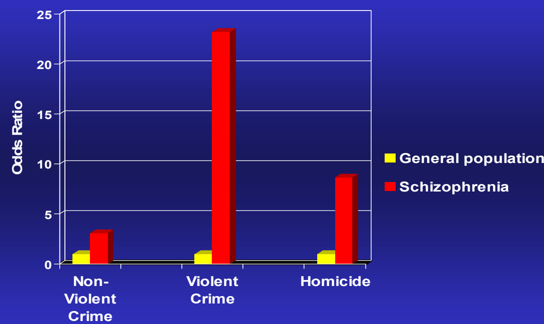
CRIME BY MEN WITH AND WITHOUT SCHIZOPHRENIA



CRIME BY WOMEN WITH AND WITHOUT SCHIZOPHRENIA



There are not many studies, so findings are likely to be unreliable and may vary by place and time period. (Wallace *et al.*, 2004; Brennan *et al.*, 2000; Eronnen *et al.*, 1996)

A ROBUST FINDING

The same phenomenon has been observed:

- By different investigators
- Examining different cohorts and samples
  - Recruited in several different countries
- Using different experimental designs
  - Longitudinal investigations of birth cohorts that compare the criminality of those with and without schizophrenia
  - Community studies of comparing the criminality of persons with and without schizophrenia
  - Diagnostic studies of random samples of convicted offenders
    - Diagnostic studies of complete cohorts of homicide offenders

WHY DOES IT MATTER?

- Human suffering
  - Victims
  - Perpetrators
    - Illness
    - Victimisation
- Financial burden
- Increases stigma against all persons with severe mental illness

If we appropriately and adequately treated patients with schizophrenia who engage in aggressive behaviour, the rates of violent crimes would be significantly reduced.

- Most violence by patients with schizophrenia involves assaults.
- But consider the implications of preventing homicides and sexual assaults, crimes that are much more rare.

PROPORTIONS OF HOMICIDES COMMITTED BY PERSONS WITH SCHIZOPHRENIA

Place	Period	Proportion	Numbers
Iceland	1900-1979	14.9%	7/47
Copenhagen	1959-1983	8.0%	20/521
Northern Sweden	1970-1980	28.4%	21/74
Contra Costa, California	1978-1980	9.9%	7/71
West Germany	1955-1964	8.2%	
Greater London and the Home Counties, UK	1979-1980	11.0%	
Finland	1984-1991	6.1%	63/1,037
Victoria, Australia	1993-1995	7.2%	
Hessen, Germany	1992-1996	10.0%	29/290

A BIRTH COHORT STUDY OF SEX OFFENDING AMONG MEN WITH SEVERE MENTAL ILLNESS

- Cohort
  - All persons born in Denmark from 1 January 1944 to 31 December 1947. (n >358,000)

2.2% of men in the cohort with severe mental illness

These men with severe mental illness:

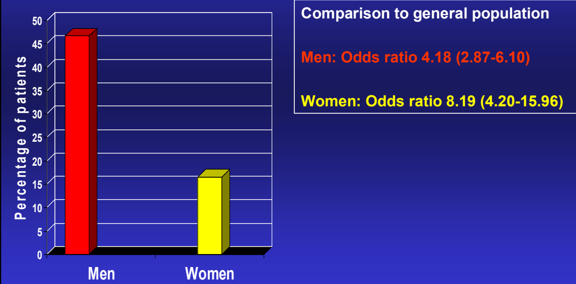
- Committed 8.4% of all the physically aggressive sex offences committed by men in the cohort
- Committed 9.0% of the non-physically aggressive sex offences
- Comprised 8.1% of the sex offenders in the cohort

Alden et al., *Archives of General Psychiatry*, 2007.

- Given the numbers of people with schizophrenia who engage in crime, and most particularly violent crime, there are implications for mental health and criminal justice systems.

IMPLICATIONS FOR GENERAL PSYCHIATRIC SERVICES

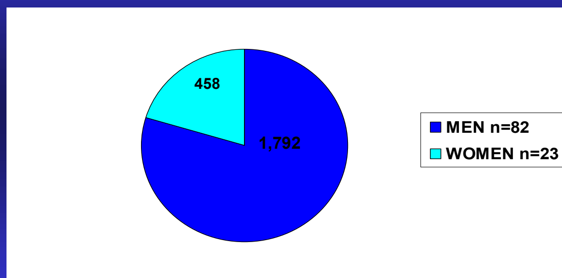
Proportions of inpatients with severe mental illness with at least one conviction for a violent offence



Hodgins et al., *British Journal of Psychiatry*, 2007.

IMPLICATIONS FOR GENERAL PSYCHIATRIC SERVICES

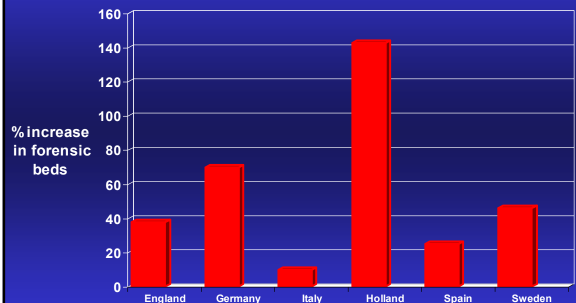
Number of criminal convictions acquired by a UK sample of inpatients with severe mental illness



Total sample: 120 men and 85 women

IMPLICATIONS FOR FORENSIC PSYCHIATRIC SERVICES

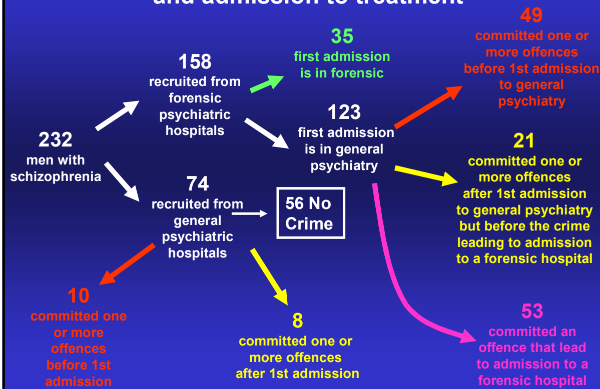
Increase in Forensic Beds from 1990-1991 to 2002-2003



Priebe et al., 2005, *BMJ*.

Most patients are men with schizophrenia

Temporal relations between criminal activities and admission to treatment



Criminal Offending Prior to First Episode of Psychosis

- In a large Danish cohort of people with schizophrenia, 40% of men and 11% of women had at least one conviction before their first contact with mental health services due to psychosis (Munkner et al., Nordic Journal of Psychiatry, 2009).
- In a UK sample, 33.9% of the men and 10.0% of the women had a record of criminal convictions before their first contact with mental health services due to psychosis
  - 19.9% of the men and 4.6% of the women had been convicted of at least one violent crime. (Hodgins et al., Early Intervention in Psychiatry, in press)
- Of offenders with schizophrenia, more than 70% had their first conviction prior to illness onset (Wallace et al., American Journal of Psychiatry, 2004; Munkner et al., Social Psychiatry and Psychiatric Epidemiology, 2003).
- There was an increase in the percentage of patients with a conviction prior to first contact with services from 1948 to 1988 (Coid et al., British Journal of Psychiatry, 1993).

IMPLICATIONS FOR ADOLESCENT MENTAL HEALTH SERVICES

- Elevated rates of schizophrenia among adolescents with substance misuse problems
  - For example,
    - Clinical sample: adolescents who consulted for substance misuse within the Greater Stockholm area 1968-1971, n=1,992
    - General population sample: drawn randomly and matched for sex, birth month and year, and place of birth, n=1,992
    - Followed until age 50
    - Risk ratio for schizophrenia
    - Men: 3.74 (95% CI 2.37-5.89)
    - Women: 8.10 (95% CI 2.47-26.64)

Hodgins et al., in preparation.

IMPLICATIONS FOR JUVENILE JUSTICE SERVICES

- Elevated rates of schizophrenia among adolescent delinquents
  - For example,
    - Cohort: all offenders aged 15 to 19 years old in Denmark in 1992, n = 780
    - Followed to 2001
    - 3.3% with schizophrenia
    - Odds ratio for schizophrenia at follow-up given a violent offence at baseline 4.59 (95% CI 1.54-13.74)

Gosden *et al.*, *Schizophrenia Bulletin*, 2005.

IMPLICATIONS FOR ADULT CRIMINAL JUSTICE SERVICES

- Individuals with schizophrenia who are accused of crimes are often held in jails with no, or minimal treatment, awaiting trial.
- In some countries, many offenders with schizophrenia are sentenced to incarceration in prison where mental health services are limited.
  - The numbers of individuals with schizophrenia who are sent to prison changes as do government policies.
- In Denmark, the number of people with schizophrenia supervised by the prison service has risen 6.7% each year since the late 1970s (Munkner et al., Social Psychiatry and Psychiatric Epidemiology, 2003).

SCHIZOPHRENIA IS ALSO ASSOCIATED WITH ELEVATED RATES OF AGGRESSIVE BEHAVIOUR TOWARDS OTHERS

- Available evidence does not support the hypothesis that the elevated rates of convictions for violent crimes among persons suffering from schizophrenia are due to discrimination.
- Evidence suggests, rather, that persons with schizophrenia are at increased risk to engage in aggressive behaviour towards others. Some of these aggressive acts lead to criminal prosecution while others do not.
- Among persons with schizophrenia, the same factors that are associated with violent crime are associated with aggressive behaviour towards others.

For example,

A UK sample of persons with severe mental illness

	Men	Women
Engaged in at least one serious assault over life-time: killing, victim required inpatient care, using a gun, knife or other object to injure someone.	41.7%	21.2%
Engaged in at least one aggressive behaviour during last six months: throwing, pushing, shoving, grabbing, slapping, kicking, biting, choking or hitting someone, forcing someone to have sex, threatening with a gun or any other weapon.	49.2%	38.8%
Engaged in at least one violent behaviour during last six months: forcing sex, threatening someone with a weapon, using a gun or knife to injure someone, or causing serious injury to someone.	21.7%	18.8%

Hodgins *et al.*, *British Journal of Psychiatry*, 2007.

VIOLENCE AMONG PERSONS WITH SCHIZOPHRENIA: IMPLICATIONS

- Serious problems and significant costs for the victims
- Serious problems for the patient
- Increased stigma against the mentally ill
- Increased financial costs to society
- Many patients in general psychiatric services who are engaging in aggressive behaviour and violent crime are not receiving treatments that address these problems
- Increasing numbers of beds in forensic hospitals where treatments that address the schizophrenia and the violent behaviour and associated problems such as substance misuse are usually provided
- Increasing numbers of patients in jails and prisons not receiving treatment

What should be done?

WHAT HAVE WE LEARNED ABOUT SCHIZOPHRENIA?

1. Schizophrenia is a neurodevelopmental disorder.
2. There is a spectrum of psychosis that is associated with violence.

SCHIZOPHRENIA - A NEURODEVELOPMENTAL DISORDER

- High heritability - many genes of small effects
  - Several of the genes that have been identified direct neural development

From conception onwards individuals who will develop schizophrenia react in a distinct manner to the environment.

- Complications during pregnancy and at birth that affect the brain

Delays in walking and talking are evident and well as dyskinetic movement abnormalities.

SCHIZOPHRENIA - A NEURODEVELOPMENTAL DISORDER

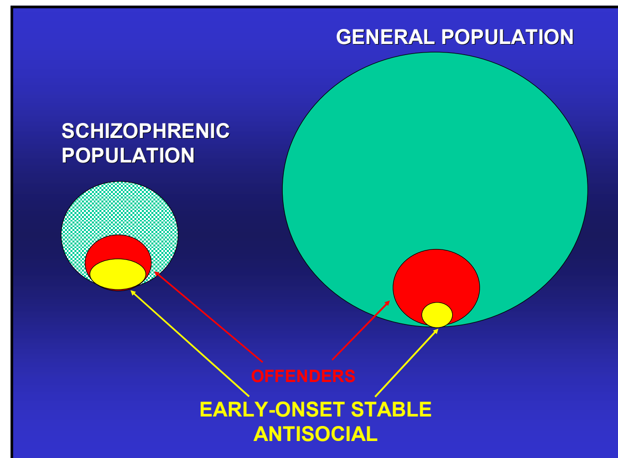
- By middle childhood
  - Internalizing problems
  - Externalizing problems
  - Lower than average IQ
  - Motor problems
  - Psychotic-like-experiences
- Two developmental trajectories leading to schizophrenia
  - With Conduct Disorder
  - With internalizing problems

CHILDHOOD CONDUCT DISORDER IS A PRECURSOR OF SCHIZOPHRENIA

- A prospective investigation of a Dutch population cohort has shown that aggressive behaviour in childhood predicts to thought disorder in adulthood
- A prospective investigation of a US population cohort has shown that aggressive behaviour in early adolescence predicts to Cluster A personality disorders in young adulthood
- The prospective investigations of children at risk for schizophrenia by virtue of having an affected relative identified a sub-group of boys with early-onset and stable behaviour problems who subsequently developed schizophrenia
- Longitudinal prospective investigations of children with conduct problems or delinquency – a disproportionate number developed schizophrenia
- A prospective investigation of a birth cohort has observed that 40% of those who developed schizophreniform disorders by age 26 were characterized by Conduct Disorder in childhood and adolescence

CHILDHOOD CONDUCT DISORDER IS MORE PREVALENT AMONG PERSONS WHO DEVELOP SCHIZOPHRENIA THAN IN THE GENERAL POPULATION

- A prospective investigation of a birth cohort has observed that 40% of those who developed schizophreniform disorders by age 26 were characterized by Conduct Disorder in childhood and adolescence
- The prevalence of Antisocial Personality Disorder is higher among persons with schizophrenia than in the general population
  - at least 3 times higher among males and 15 times higher among females
- The number of Conduct Disorder symptoms present before age 15 functions as a continuum to predict schizophrenia in adulthood
- Among both men and women with schizophrenia, the prevalence of Conduct Disorder prior to age 15 is approximately 22%.



RESULTS FROM PROSPECTIVE LONGITUDINAL INVESTIGATIONS

- Prospective longitudinal investigation of a birth cohort in Dunedin, New Zealand.
- The risk of violence was elevated among cohort members who developed schizophreniform disorder by age 26.
- 40% of those who developed schizophreniform disorders by age 26 were characterized by Conduct Disorder in childhood and adolescence
- This association was partially explained by the presence of both aggressive behaviour at ages 7, 9, and 11 and psychotic-like-experiences at age 11

Arseneault et al., *British Journal of Psychiatry*, 2003.

RESULTS FROM RETROSPECTIVE ACCOUNTS OF ADULT PATIENTS AND THEIR FAMILIES, AND FROM RECORDS

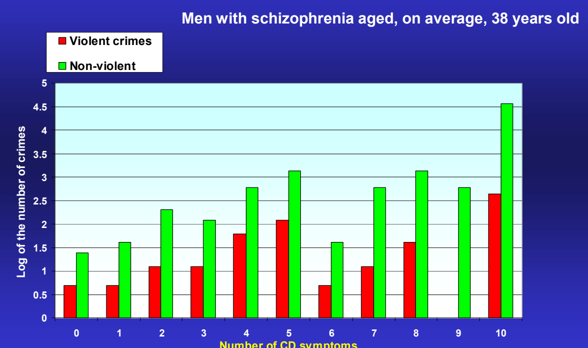
- Among men with schizophrenia, those who presented Conduct Disorder prior to age 15 as compared to those who did not:
  - Obtained, on average, lower than marks in elementary school
  - Greater proportions did not graduate from secondary school
  - Greater proportions were abusing drugs prior to age 18
  - Greater proportions had fathers and brothers with criminal records
  - Greater proportions had fathers and brothers with substance misuse problems

OFFENDERS WITH SCHIZOPHRENIA AND CONDUCT DISORDER PRIOR TO AGE 15

- Among male offenders with schizophrenia, those who had conduct disorder prior to age 15 as compared to those with no prior conduct disorder:
  - Committed more non-violent and violent crimes
  - Committed a greater diversity of types of crimes
  - Had criminal histories similar to non mentally ill offenders
  - Most abused alcohol and/or illicit drugs
    - Substance abuse was not associated with criminality after controlling for childhood conduct problems

Number of non-violent and violent crimes as a function of the number of Conduct Disorder symptoms prior to age 15

Men with schizophrenia aged, on average, 38 years old



CHILDHOOD CONDUCT DISORDER IS ASSOCIATED WITH ANTISOCIAL AND AGGRESSIVE BEHAVIOUR THROUGH ADULTHOOD

- Replicated in different samples
- Is true for males and females
- Conduct Disorder symptoms prior to age 15 are associated with convictions for non-violent crime, violent crime, and aggressive behaviour
- All the associations remain significant after controlling for past and current alcohol and drug use

CONDUCT PROBLEMS COULD PLAY A CAUSAL ROLE

- Children with Conduct Disorder are exposed earlier and begin abusing drugs earlier than other children (Robins & McEvoy, 1999).
- Heavy use of cannabis in adolescence, especially in early adolescence, is associated with an increased risk of subsequently developing psychosis (Arseneault, Cannon, Witton, & Murray, 2004; Henquet, Murray, Linszen, & Van Os, 2005; Moore, Zammit, Loingford-Jughes, Barnes, jones, Burke, et al., 2007; Zammit, Allebeck, Andreasson, Lundber, & Kewis, 2002).
- In a sample of individuals experiencing their first episode of psychosis, we observed that the number of Conduct Disorder symptoms prior to age 15 was associated with lifetime cannabis use and with use of cannabis prior to age 14 (Malcolm, Picchioni, DiForti, Cooke, Joseph, McQueen, et al., under review).
  - These results suggest that Conduct Disorder increases the risk of early use of cannabis which in turn increases the risk of schizophrenia.

NEURO-COGNITIVE IMPAIRMENTS

- Studies are riddled with methodological weaknesses.
- The results suggest, however, that among men with schizophrenia, those who have displayed a stable pattern of antisocial and aggressive behaviour since childhood, as compared with those with no such history
  - perform better on neuropsychological tests tapping specific executive functions
  - more poorly on assessments of orbitofrontal functions show fewer neurological soft signs
  - display larger reductions in volume of the amygdalae
  - more structural abnormalities of the orbitofrontal system
  - more abnormalities of white matter in the amygdala-orbitofrontal system smaller reductions in volumes of the hippocampus.

Naudts & Hodgins, *Schizophrenia Bulletin*, 2006.

Among persons with schizophrenia, those with substance misuse might present better social and cognitive functioning than those without substance misuse

Meta-analysis

- 23 studies, 1807 persons with schizophrenia

- Results
  - Global Cognitive scores did not differ for patients with and without a history of substance misuse
  - Schizophrenia + substance – better at Trail Making Task and the speed processing domain
  - Significant effect of age on Global Cognitive Scores, speed processing, and working memory such that effect sizes were greater among younger than older patients
  - Patients who abused alcohol obtained Global Cognitive scores similar to those of patients with no history of substance misuse
  - Patients who abused cannabis obtained higher scores for problem solving and reasoning and visual memory than other patients

Potvin et al., *Schizophrenia Research*, 2007.

An fMRI investigation

- Participants
  - 12 men with schizophrenia who had committed a homicide with a diagnosis of Conduct Disorder/Antisocial Personality Disorder and substance misuse
  - 12 men with schizophrenia who had committed a homicide – no history of violence prior to the homicide, no substance misuse or diagnosis of Conduct Disorder or Antisocial Personality Disorder
  - 12 healthy non-criminal men
- Go/No Go Task
- Results are consistent with our hypothesis that persons with schizophrenia who have a history of conduct problems since childhood may present dysfunction of the basal or orbital parts of the prefrontal cortex.
  - (This pattern of dysfunction has been observed among persons without schizophrenia who present a history of conduct problems from an early age.)

Joyal et al., *Schizophrenia Research*, 2007.

A HYPOTHESIS TO BE TESTED

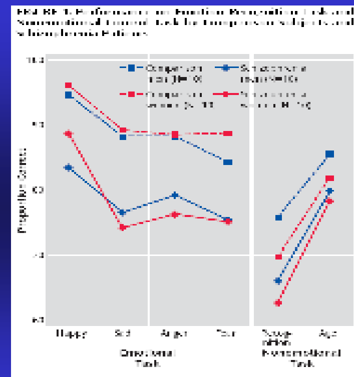
Among children developing schizophrenia, brain abnormalities render them vulnerable for antisocial and aggressive behaviour.

- Adults with schizophrenia are impaired in recognizing emotions (happy, sad, anger, fear)
- Early-onset stable antisocial men (with no severe mental illness) are impaired in recognizing sadness (and perhaps fear) in faces.
  - Not recognizing sadness may release constraints on engaging in aggressive behaviour
  - Not recognizing anger is associated with aggressive behaviour

DEFICITS IN FACIAL AFFECT PROCESSING IN ANTISOCIAL POPULATIONS: A META-ANALYSIS

- Antisocial Populations defined as individuals who were psychopathic, conduct disordered, aggressive, unsocialised, abusive and criminal.
- " … the results of three types of analyses showed consistent deficits in the recognition of fear and sadness in antisocial samples. (Some analyses showed differences also in the recognition of surprise.)
- No consistent deficits were found in the recognition of the remaining three expressions (anger, disgust, happiness).
- Deficits were greater for fear than for all other expressions…"

Marsh & Blair, *Neuroscience & Biobehavioral Reviews*, 2007.



- Deficit is present among siblings (Bediou et al., *British Journal of Psychiatry*, 2007)
- Deficit is present before onset of psychosis (Addington et al, *British Journal of Psychiatry, 2008*).

Schneider, *et al., American Journal of Psychiatry*, 2006.

Facial affect recognition deficits are displayed by violent offenders with schizophrenia

- Sample – 28 violent offenders with schizophrenia
- The offenders showed a deficit in affect recognition comparable to that of the average patient with schizophrenia (Frommann et al. 2003).
- Prior to treatment the performance in decoding facial affect was significantly associated with well established assessments of risks of violent behavior.

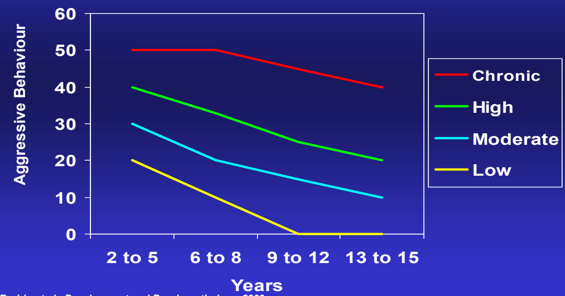
Correlations with Facial Affect Recognition Test Scores

HCR-20 Total score	-.446*
H score	-.441*
C score	-.252
R score	-.470*
PCL:SV Total score	-.347
Deficient Affective Experience	-.354

This deficit was corrected with treatment!

Frommann, et al. 2nd *European Conference on Schizophrenia Research*, 2009.

Longitudinal prospective investigations suggest that children vulnerable for schizophrenia display motor delays, neurological signs, receptive language deficits, lower than average IQ scores, and are rejected by their peers. These characteristics limit learning not to be aggressive.



Broidy et al., *Development and Psychopathology*, 2003.

WHAT HAVE WE LEARNED ABOUT SCHIZOPHRENIA?

1. Schizophrenia is a neurodevelopmental disorder.
   Biological and environmental causal factors accumulate from conception through adolescence until the threshold for illness is surpassed.
2. There is a spectrum of psychosis that is associated with violence.

PSYCHOTIC SYMPTOMS AND VIOLENCE

- Recent studies of large population samples indicate that psychotic symptoms are more common than previously thought (Stefanis, Hanssen, Sminis, Avramopoulos, Evdokimidis, Stefanis et al., 2002).
  - For example, a US study revealed that 5.1% of 38,132 adults reported psychotic-like-experiences. (Mojtabai, 2006).
- The presence of psychotic-like-experiences was associated with a five fold increase in the risk of assaulting another person (Mojtabai, 2006).
- Yet the results of studies of the association of positive symptoms of psychosis and violent behaviour among persons with schizophrenia are contradictory
  - Due to methodological features of studies including retrospective assessment of symptoms and failure to take account of other factors such as previous violence, childhood behaviour problems, and intoxication, that are known to be associated with violence.

PSYCHOTIC SYMPTOMS AND VIOLENCE

- Many acutely psychotic patients who are in most cases admitted involuntarily to psychiatric wards behave aggressively.
- The correlates of violent behaviour during acute episodes of psychosis among patients hospitalised on a psychiatric ward differ from the correlates of violent behaviour that occurs in the community.
- Aggressive incidents on an acute psychiatric ward are as common among women as men, and unlike aggressive behaviour that occurs in the community they are strongly associated with confusion and thought disorder (Krakowski & Czobor, 2004; Steinert, 2002).
- The aggressive behaviour declines rapidly in the days following admission.
- Thus, positive psychotic symptoms constitute the principal factor associated with aggressive behaviour during an acute episode.

PSYCHOTIC SYMPTOMS AND VIOLENCE

- Once the florid psychotic symptoms are reduced other factors such as male sex, young age, threat-control-override symptoms and depression, a history of conduct problems, previous aggressive behaviour, and current illicit drug use are associated with aggressive behaviour (Hodgins & Riaz, *European Psychiatry*, in press).

POLICY IMPLICATIONS OF NEW KNOWLEDGE ABOUT SCHIZOPHRENIA

- Facts
  - Schizophrenia is associated with aggressive behaviour
    - In many patients during acute episodes
    - In some patients after acute episodes
- Policy
  - Medication
  - Assessment of antisocial/aggressive behaviour once the florid symptoms of psychosis are resolved
  - Treatments that target the antisocial/aggressive behaviours
  - Interventions to limit factors that are associated with antisocial/aggressive behaviour

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- Community services that focus on schizophrenia fail to reduce aggressive behaviour or criminality (Bond et al., *Disease Management Health Outcomes*, 2001; Calsyn et al, *Criminal Behaviour and Mental Health*, 2005; Walsh et al *BMJ*, 2001).
- There are programmes that effectively reduce substance misuse among patients with schizophrenia (Green et al, *American Journal of Psychiatry*, 2007).
- Services that focus on both the schizophrenia and the antisocial/aggressive behaviour achieve the best outcomes.
  - Care by Forensic Assertive Community Teams has been shown to reduce both rehospitalizations, and arrests, and time in jail (Cuddeback et al, *Psychiatric Services*, 2008).
  - A direct comparison of outcomes two years after discharge from forensic and civil inpatient wards showed lower rates of both symptoms and aggressive behavior among those discharged from the forensic hospitals (Hodgins et al, *International Journal of Forensic Mental Health*, 2007).
- Community care orders coupled with adequate treatment have been associated with reductions in aggressive behavior of patients living in the community (Swartz & Swanson, *Canadian Journal of Psychiatry*, 2004).

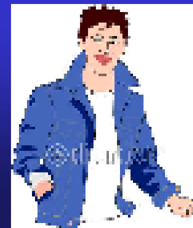
- Cognitive-Behaviour Offender Rehabilitation Programmes
  - Two small non-randomised studies of the Reasoning and Rehabilitation programme reported improvements on measures of social problem solving, coping responses and criminal attitudes following programme completion (Donnelly & Scott, *British Journal of Forensic Practice*, 1999; Clarke et al., *Journal of Forensic Psychiatry and Psychology*, 2010).
  - Evaluations of other cognitive skills programmes with this population have reported improvements in social problem solving and thinking styles (Tapp et al., Legal and Criminological Psychology, 2009), lower rates of staff-reported disruptive behaviour and changes in attitudes towards violence (Young et al., *The Cambridge Handbook of Forensic Psychology*, 2010), and fewer arrests for violent and non-violent crimes (Ashford et al., *Criminal Justice and Behavior*, 2008).

inside forensic hospitals or prisons

POLICY IMPLICATIONS OF NEW KNOWLEDGE ABOUT SCHIZOPHRENIA

- Facts
  - Schizophrenia is a neurodevelopmental disorder
  - A large sub-group of individuals developing schizophrenia present conduct problems in childhood that remain stable throughout adulthood
  - These individuals have significant histories of aggressive behaviour towards others and/or violent crimes before first contact with mental health services due to psychosis.

- Policy
  - At first admission, once the acute episode is resolved a detailed assessment is required to identify the pattern of prior antisocial and aggressive behaviours.
  - If such behaviour patterns are present, interventions that specifically target the antisocial and aggressive behaviour and associated deficits and problems are required.
    - Cognitive-behavioural programmes to reduce aggressive behaviour and increase pro-social behaviours, to reduce anger, etc
    - Programmes to reduce substance misuse
    - Cognitive remediation and job training
- Problems
  - Compliance with medication
  - Participation in treatments



EARLY-START OFFENDERS WITH SCHIZOPHRENIA

- ✓ Schizophrenia
- ✓ Poor insight
- ✓ Antisocial behaviour since childhood
- ✓ Substance misuse since age 14
- ✓ Non-violent offending since age 15
- ✓ Violent offending since age 18
- ✓ Few pro-social skills
- ✓ No employment skills
- ✓ Parents and siblings with substance abuse and/or criminality
- ✓ Acquaintances who use drugs and engage in crimes
- ✓ Lives in a neighbourhood with easy access to drugs and to other criminal activities

This is one person with multiple problems each of which interacts with the others!

A TRIAL OF R&R WITH PATIENTS IN THE COMMUNITY

- Participants:
  - Men with schizophrenia/schizo-affective disorder
  - Living in the community
  - At least one assault in the past six months
  - At least one conviction for a violent offence
- Procedure:
  - Research interviews - prior to treatment and each month for 6 months. These interviews were completed by a research worker and the patients were paid £5.50 for each interview.
  - Participate in R&R 3 times a week for 13 weeks.
  - Three groups, each with 8-10 patients.
  - Group 3 participants were offered two additional sessions of motivation therapy prior to the RRP.
  - Average time spent by therapists engaging each patient in the R&RP was 2.9 hours and the total time required for training, preparation, reminders, motivational interviews and delivery of R&RP was 372.6 hours.

- Of the 28 patients, 25 attended no R&RP session and 3 attended one session
- All patients completed a lengthy interview at study entry, and one-third to one-half completed monthly interviews for which they were paid £5.50 for each interview.
- In the six months after the initial interview,
  - 4 (14.3%) patients were convicted of criminal offences
  - 16 (57.1%) were in contact with the police
  - 10 (35.7%) engaged in at least one physically aggressive behaviour towards another person
  - 9 (32.1%) experienced physical victimisation.
  - 4 (14.3%) patients reported misusing alcohol and 12 (42.9%) reported using illicit drugs
  - All were partially or fully compliant with meetings with their care co-ordinator, on average every two weeks.

- Patients with schizophrenia/schizo-affective disorder and a history of violence who were living in the community would not participate in the R&R programme.
- Community Mental Health Teams and ward staff were not interested even in "free" treatment offered to difficult patients.
- Patients were choosing between doing nothing and a relatively difficult and substantial commitment to learning how to change their own behaviour.
- Community care orders and/or money may be necessary to motivate patients living in the community to participate in treatments aimed at reducing antisocial/aggressive behaviours.

CONCLUSIONS

- Forensic expertise is needed in general psychiatric services.
- Specific treatments aimed at reducing antisocial and aggressive behaviours are needed once the FIRST episode of psychosis resolves.
- Treatments of children and adolescents with conduct problems are needed to prevent the development of adult offenders.