

## Clinical characteristics of schizophrenia: Israeli Bedouin compared with Palestinian Arabs in Israel and the Palestinian Authority

Charakterystyka kliniczna schizofrenii: porównanie grupy izraelskich  
Beduinów oraz palestyńskich Arabów mieszkających w Izraelu  
i na terenach Autonomii Palestyńskiej

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### Abstract

As part of a genetic study of schizophrenia, symptoms were studied in 50 Bethlehem Palestinian patients with schizophrenia, 61 Israeli Negev Bedouins with schizophrenia and 63 Israeli Galilee Arab patients with schizophrenia. The content and character of the schizophrenic psychosis was significantly different in the three groups studied. While all three groups are Arabic speaking Muslims, their social circumstances differ and this could explain the differences in clinical phenomenology of schizophrenia. The results may relate to differences in clinical phenomenology of schizophrenia reported in different areas of the world.

**Key words:** schizophrenia, Bedouin, Palestinians, genetics, psychiatry

### Streszczenie

W ramach prowadzonych badań nad genetyką schizofrenii dokonano oceny objawów schizofrenii w grupie 50 Palestyńczyków z Betlejem, 61 izraelskich Beduinów z Negev oraz 63 izraelskich Arabów z Galilei. Treść i charakter objawów psychotycznych w badanych grupach była znacząco różna. Chociaż w skład wszystkich trzech grup wchodził muzułmanie mówiący po arabsku, ich sytuacja społeczna była odmienna i to mogłoby tłumaczyć stwierdzone różnice w fenomenologii schizofrenii. Uzyskane wyniki nawiązują do odmienności fenomenologii klinicznej schizofrenii opisywanej w różnych częściach świata.

**Słowa kluczowe:** schizofrenia, Beduini, Palestyńczycy, genetyka, psychiatria

### Introduction

Differences in the phenomenology of schizophrenia have been described in different cultures. For example, rural cultures in Africa have been reported to have a high rate of recovery from acute schizophrenia with low rates of chronic schizophrenia (Ohaeri 1993; Waxler 1979). Others have emphasized the basic similarity of schizophrenic symptoms around the world (Carpenter et al. 1973). More recently, possible clinical distinctiveness has been sought

for schizophrenia in genetic isolates based on an analogy with diseases such as Alzheimer's where monogenic forms of the disease with distinguishing characteristics have been identified in particular pedigrees (Sherrington et al. 1995).

Psychiatric disorders in Arab societies have been described in the literature, including schizophrenia (Al-Jaddou and Malkawi 1997; Al Khani et al. 1986; Bebbington et al. 1993; Bebbington et al. 1998; Fajri et al. 1996; Ghubash et al. 1994; Kent and Wahass 1996). Negev Bedouin have been studied from

a psychosocial perspective (al-Krenawi et al. 1996; Dobrusin et al. 2008), and Israeli Arabs have been studied from the point of view of specific genetic medical diseases (Jaber et al. 1997). The effects of Israeli occupation and Intifada on the mental health of Palestinians has also been described (Khamis 1998). Reliability of diagnostic systems in psychiatry in Arab cultures has been assessed (Okasha and Seif el Dawla 1992). The effect of the high rate of cousin marriages in Muslim societies on rates of schizophrenia has been evaluated (Chaleby and Tuma 1987; Dobrusin et al. 2008). However, the present paper is the first attempt to look for clinical differences using standardized clinical instruments (SCID) (Spitzer et al. 1992) in various subgroups within Arab societies.

As part of a search for genes for schizophrenia in relative genetic isolates, we were able to compare the phenomenology of schizophrenia in three groups: 1) Negev Bedouin, many of whom are illiterate nomadic tent dwellers or one generation removed from such; 2) Palestinian Arabs in the Galilee of Israel, a village farming culture rapidly transformed over the past 50 years into a literate, school-attending group in the North of Israel with a higher per capita income than in neighbouring Arab countries; 3) Palestinian Arabs in the Palestinian Authority, a farming village culture with a per capita income similar to neighbouring Arab countries but with the stress of Israeli occupation and Intifada.

## Methods

Schizophrenic patients were identified in all three populations by a survey of hospital and clinic records. Only adult schizophrenics with two living parents agreeing to an interview and blood sampling for DNA were included. This sample was collected for the purpose of a genetic association study of schizophrenia, as previously described (Dobrusin et al. 2001; Ivo et al. 2006; Korostishevsky et al. 2006; Kremer et al. 2003; Kremer et al. 2000; Murad et al. 2001). In the Bedouin population of about 35,000 adults, 61 schizophrenics were studied. In the Arabs in Northern Israel (Galilee), about 100,000 adults, 63 schizophrenics were studied. In the Palestinian Authority Arab population (receiving treatment in the Bethlehem Hospital and Clinic) of about 500,000 adults, 50 schizophrenics were studied. The sample was collected by sequential chart examination; thus the different sampling rates probably do not reflect a different rate of schizophrenia, but different degrees of access to treatment settings.

An SCID based interview was conducted in all cases by senior psychiatrists who had participated in a two-day session for inter-rater reliability in diagnosis and symptom identification.

## Results

Table 1 summarizes the results. Male/female ratios were similar in all three groups, a point of interest given that a Polynesian isolate (Waldo 1999) has been reported to have an unusual male/female ratio in schizophrenia. The preponderance of males in all three groups may reflect a bias for young age introduced by the demand that all probands have two living parents. The high rate of unemployment and disability in all three groups, even in the Bedouin, is in contrast to reports that pre-industrial peoples find schizophrenia to be less debilitating (Bebbington et al. 1998). When looking at the proportions of patients having disability insurance, there is a significant difference between the Galilee Arabs and the Palestinian Authority Arabs, and the Negev Bedouin are in between. This may reflect a difference in the existence and availability of welfare services rather than differences in prognosis.

With regard to education, there seems to be no difference between the two groups living in Israel, but there is a significant difference between each of them and the Palestinian Authority residents, which may again reflect a social difference, and not a disease-related difference. Suicidal ideation and attempts seemed to be about as common in the Bedouin as in Arab neighbours, although the sampling technique was not appropriate for measuring this variable and this statistic clearly does not necessarily represent suicide rates of the whole population.

The content and character of the schizophrenic psychosis was different in the three groups studied. Paranoid schizophrenia was more common in Galilee Palestinians than in the two other groups, and delusions of persecution were more frequent. Auditory hallucinations were more frequent in this group. Somatic delusions were far more common in the Palestinian Authority patients. Age of onset was similar in the three groups, with no evidence of early onset forms.

## Discussion

The Bedouin are a group of clans with unique genetic diseases in each clan (Jaber et al. 1997). Galilee Arabs are a heterogeneous group, many of who immigrated in recent centuries from

**Table 1.** Comparison of schizophrenia symptomatology among the different Arab populations

	Negev Bedouin (NB)	Galilee Palestinians (GP)	Palestinian Authority (PA)	Significance
<b>N</b>	61	63	50	GP vs. PA, p=0.02
<b>Male</b>	66%	58%	78%	
<b>Female</b>	34%	42%	22%	
<b>Marital Status</b>				
Single	46%	56%	56%	NB vs. GP, p=0.04
Married	35%	40%	34%	
Divorced	19%	4%	10%	
<b>Employment</b>				
Full	4%	5%	10%	NB vs. PA, p=0.03
Partial	43%	34%	20%	
Unemployed	53%	61%	70%	
<b>Disability Insurance</b>	82%	95%	70%	NB vs. GP, p=0.02 GP vs. PA, p<0.0001
<b>Education</b>				
Low	55%	34%	10%	NB vs. GP, p=0.04
Medium	40%	60%	60%	NB vs. PA, p<0.0001 GP vs. PA, p<0.0001
High	5%	6%	30%	
<b>Subtype</b>				
Paranoid	55%	23%	54%	NB vs. GP, p<0.0001 GP vs. PA, p<0.0001
Catatonic	6%	2.5%	6%	
Disorganized	11%	44%	8%	
Undifferentiated	11%	5%	22%	
Schizoaffective	22%	25%	10%	
<b>Age of onset</b>	23 (16-35 yrs)	22 (14-45 yrs)	24.5 (17-32 yrs)	
<b>Delusions</b>				
Persecution	74%	90%	82%	NB vs. GP, p=0.015
Control	40%	60%	42%	NB vs. GP, p=0.02 GP vs. PA, p=0.05
Jealousy	17%	19%	4%	NB vs. PA, p=0.04 GP vs. PA, p=0.02
Religious	55%	24%	24%	NB vs. GP, p<0.0001 NB vs. PA, p=0.001
Somatic	62%	25%	86%	NB vs. GP, p<0.0001 NB vs. PA, p=0.005 GP vs. PA, p<0.0001
<b>Hallucinations</b>				
Auditory	44%	89%	62%	NB vs. GP, p<0.0001 GP vs. PA, p=0.001
Visual	14%	5%	18%	GP vs. PA, p=0.02
<b>Suicidality</b>				
Ideation	16%	21%	26%	
Attempt	6%	4%	12%	

neighbouring Arab countries, as did many of the citizens of the Palestinian Authority. Galilee Arabs have lived as a minority in an industrializing Jewish society since 1948 (Israel's independence) and minority status may affect schizophrenia phenomenology (Boydell et al. 2001). Palestinian Authority Arabs lived under Jordanian occupation in 1948-1967 and Israeli occupation since 1967, and the stress of occupation and the recent rebellions (Intifada) could also affect mental health (Cantor-Graae and Selten 2005). Differences in schizophrenia phenomenology were found between Saudi Arabia and the UK (Kent and Wahass 1996) and also between aboriginal and non-aboriginal populations in Australia (Mowry et al. 1994). The data support the possibility that symptomatic differences may exist between schizophrenic patients in different populations, but diagnostic differences among the psychiatrists at the different medical centres could also be a cause. No marked unique syndromes within schizophrenia, such as exist among the Bedouin in genetic medical disease (Jaber et al. 1997), were found.

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