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Prodromal Symptoms and Signs of First Episode Schizophrenia in Iraq

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Abstract

Background: Onset of schizophrenia is often preceded by other symptoms and types of behaviour, usually referred to as prodromal symptoms.

Objectives: Identify the main prodromal symptoms and signs preceding the full blown picture of first episode schizophrenia.

Methods: This is a cross-section study. 328 Iraqi first episode schizophrenic inpatients admitted to Ibn-Rushed psychiatric mental hospital were examined during the period June, 1st, 2009 to June, 1st, 2011. Diagnosis confirmed through a Structured Clinical Interview for DSM-IV-TR. List of sociodemographic and clinical data was used. Detailed psychiatric history taking and mental state examination were applied. Supplemental information was obtained from patients and family members.

Results: The main frequent prodromal signs and symptoms preceding the development of a full blown picture of first episode schizophrenia were; lack of sleep, aggression, restlessness, disorganized speech, anxiety, suspiciousness, social withdrawal, odd behavior, somatic complaints.

Conclusion: The study explores the symptoms preceding the full blown picture of first episodes schizophrenia. Psycho-educational approach to patients and families may be mandatory to increase the awareness about schizophrenic prodromal symptoms to reduce the duration of untreated psychosis.

Keywords: Schizophrenia; Prodromal; First Episode; Symptom; Iraq

List of Abbreviations: DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, fourth edition, American Psychiatric Association

Introduction

Schizophrenia is a severe mental disorder that has significant, long-lasting negative effects on the patients as well as the entire society [1]. Schizophrenia is a debilitating mental illness that affects 1% of the population in all cultures. It affects equal numbers of men and women, but the onset is often later in women than in men [2]. The term schizophrenia was introduced by Bleuler over a hundred year ago to describe the breaking up or splitting of psychic functioning he observed in these patients and the diagnosis of this disorder is still based exclusively on clinical symptoms [1]. Schizophrenia is the most common functional psychotic disorder, and individuals with the disorder can present with a variety of manifestations [3]. Patients with schizophrenia present clinically with psychotic, negative and cognitive symptoms, which can become evident late in adolescence or in early adulthood [4]. No single sign or symptom is pathognomonic of schizophrenia [5]. We can describe at least three stages in the development of a schizophrenic illness: the prodrome, the first episode and chronic phase [6]. It is generally believed that the onset and recurrence of psychotic symptoms in schizophrenia are often preceded by other symptoms and types of behaviour, usually referred to as prodromal symptoms [7]. Most individuals with schizophrenia retrospectively report a prodromal period characterized by increasing problems in thinking, feeling, and behaving [8]. It is now recognized that in the majority (68%) of cases, the index psychotic episode is preceded by a prodromal stage [9]. In recent years there has been more research designed to identify any such prodromal symptoms and assess their relationship to the psychotic process in schizophrenia [7]. It is not always possible to differentiate between a prodromal symptom and the true onset of psychosis [10]. During these prodromal or residual periods, the signs of disturbance may manifest through only negative symptoms, or by two or more symptoms listed in DSM-IV Criterion A which are present in an attenuated form, e.g. odd beliefs and unusual perceptual experiences [11].

The prodrome indicates a period before the full manifestation of a psychotic illness, during which patients first experience changes in their emotions, cognition or behaviour which may indicate a deviation from the normal level of functioning [4]. The onset of psychotic symptoms observed in schizophrenia is frequently preceded by nonspecific changes in behavior, emotional state, and/or cognitive state, with common signs and symptoms of the prepsychotic stage of schizophrenia including sleep disturbance, anxiety, anger/irritability, depressed mood, deterioration in functioning, social withdrawal, poor concentration, suspiciousness, loss of motivation, and low energy [12,13]. The psychotic prodrome is potentially important for early diagnosis and management of psychotic disorders, early detection of relapse, prospective studies of high-risk individuals, and prognosis [14]. There has been increasing interest in the potential for early detection and intervention during the prodromal phase of a psychotic disorder, i.e., the period of functional decline before full-blown psychotic symptoms first appear [15].

Patients and Methods

Design and setting

A cross-sectional study was conducted in Ibn-Rushed psychiatric mental hospital, Baghdad, Iraq. The data collection was done during the period June, 1st, 2008 to June, 1st, 2010.

Study Population and Sampling

First episode schizophrenic inpatients diagnosed by a senior psychiatrist, of any age, sex, residence and educational level were assessed.

Inclusion criteria

All patients included in the study were; Iraqi, first episode schizophrenic inpatients, fulfilling the DSM-IV diagnostic criteria of schizophrenia, agreed to participate, and free of any neuroleptic medications during the prodromal phase.

Exclusion criteria

Patients with a history of organic brain disease, head injury, seizure disorder, pregnant, and drug or alcohol dependence were excluded.

Data collection Tools

The subjects had all been diagnosed as first episode schizophrenic, confirmed through a Structured Clinical Interview for DSM-IV-TR. List of sociodemographic and clinical data was used. Detailed psychiatric history taking and mental state examination were applied. Supplemental information was obtained from patients and family members. Patients and their family members were asked when the patient (or the family member) first experienced (or noticed) behavioral changes which, in retrospect, appear to have been related to the patient's becoming ill. These sign and symptoms of behavioral changes were reported in the special list prepared for this study. Definitions: prodrome is the period between the most valid estimates of the onset of a change in the person and the onset of psychosis. The onset of the prodromal phase was defined by the appearance of the first noticeable symptom or symptoms considered to indicate the appearance of the disease. The onset of the psychotic phase was defined as the appearance of active phase symptoms (American Psychiatric Association 1994) [16].

Definition of variables

The independent variables evaluated to explain prodromal symptoms were socio-demographics (age, gender, marital status, occupation, education level, economic status, and living circumstances), and patient characteristics (religion, the source of referral, the reaction of the family, and family history).

Statistical Analysis

Statistical package of social sciences (SPSS) version 19 for windows was used for data entry and analysis

Ethical Issues

Informed consent was obtained from the patients' families after clarifying the objectives of the study. Names were kept anonymous and all paper files and electronic records were kept in full privacy.

Results

A total of 345 patients were approached; 328 completed the interviews, with age range (17-60) years, mean age (33.25±10.02) years. Male 57.3%, about 80% of sample age below 40 years, more than half were singles, two third not working, two third of low education, half satisfied their economic status, more than 90% lives within their families, 94% Muslims, 70% family referral, 72%

of the family accepted the illness, and half of positive family history of mental illness (Table 1).

		No.	%
AGE GROUP	16 - 25 Years	89	27.1%
	26 - 35 Years	123	37.5%
	36 - 45 Years	66	20.1%
	46 - 55 Years	38	11.6%
	56 Years +	12	3.7%
SEX	Male	188	57.3%
	Female	140	42.7%
MARITAL STATUS	Single	189	57.6%
	Married	68	20.8%
	Separated	34	10.3%
	Divorced	30	9.2%
	Widowed	7	2.1%
OCCUPATION	Student	23	7.0%
	Employed	46	14.0%
	Housewife	77	23.5%
	Free work	61	18.6%
	Retired	6	1.8%
	Unemployed	115	35.1%
EDUCATION LEVEL	Illiterate	20	6.1%
	Primary	99	30.2%
	Intermediate	94	28.7%
	Secondary	46	14%
	University	69	21%
ECONOMIC STATUS	Poor	115	35.1%
	Satisfied	186	56.7%
	Rich	27	8.2%
LIVING CIRCUMSTANCES	With Family	299	91.1%
	With relatives	11	3.4%
	Alone	18	5.5%
RELIGION	Muslim	311	94.8%
	Christian	14	4.3%
	Other	3	0.9%
SOURCE OF REFERRAL	Family	231	70.4%
	Relative	49	14.9%
	Physician	27	8.2%
	Faith healar	15	4.57%
	Court	6	1.8%
REACTION OF FAMILY	Accepted	239	72.9%
	Denil	22	6.7%
	Rejected	67	20.4%
FAMILY HISTORY	Negative	177	54.0%
	Positive	151	46.0%

Table 1: Distribution of the study group by sociodemographic and clinical characteristics

The main frequent prodromal signs and symptoms preceding the development of full blown picture of first episode schizophrenia were; lack of sleep 57%, aggression 48.1%, restlessness 36.8%, disorganized speech 30.4%, anxiety 20.7%, suspiciousness 19.5%, social withdrawal 16.7%, odd behavior 16.1% somatic complaints 15.5%, (Table 2).

Statistical significance was assessed for each of the prodromal signs and symptoms with sociodemographic and clinical variables (Table 3).

PRODROMAL SYMPTOMS	No.(328)	%
Sleep	188	57.3%
Aggression	158	48.1%
Restless	121	36.8%
Speech	100	30.4%
Anxiety	68	20.7%
Suspiciousness	64	19.5%
Social Withdrawal	55	16.7%
Odd Behavior	53	16.1%
Somatic Complaints	51	15.5%

Table 2: Prodromal symptoms and signs in first-episode schizophrenia in descending order of frequency and percentages

		SLEEP		AGGRESSION		RESTLESS		SPEECH		SUSPICIOUSNESS		SOCIAL WITHDRAWAL		SOMATIC COMPLAINTS		ANXIETY		ODD BEHAVIOR	
		No.	P	No.	P	No.	P	No.	P	No.	P	No.	P	No.	P	No.	P	No.	P
AGE GROUP	16 – 25 Years	55	0.016	51	0.052	35	0.084	26	0.727	23	0.000	12	0.011	7	0.002	21	0.215	14	0.000
	26 - 35 Years	69		58		50		41		19		30		22		21		6	
	36 - 45 Years	31		23		23		16		22		6		19		16		16	
	46 - 55 Years	29		18		13		13		0		3		3		10		9	
	56 Years +	4		8		0		4		0		4		0		0		8	
SEX	Male	98	0.032	103	0.005	49	0.000	59	0683	43	0.075	34	0.459	34	0.142	33	0.100	32	0.623
	Female	90		55		72		41		21		21		17		35		21	
MARITAL STATUS	Single	99	0.000	90	0.001	76	0.000	52	0.311	48	0.023	34	0.041	32	0.021	43	0.221	30	0.016
	Married	38		32		14		25		7		12		16		11		17	
	Separated	28		9		9		9		6		9		3		10		0	
	Divorced	23		20		15		10		3		0		0		4		6	
	Widowed	0		7		7		4		0		0		0		0		0	
OCCUPATION	Student	13	0.060	16	0.000	4	0.001	3	0.003	7	0.000	0	0.220	3	0.026	3	0.150	14	0.000
	Employed	27		17		17		7		19		9		9		11		9	
	Housewife	50		24		41		22		11		12		14		21		7	
	Free work	27		36		15		27		6		12		16		7		7	
	Retired	6		6		0		0		0		0		0		0		3	
	Unemployed	65		59		44		41		21		22		9		26		13	
EDUCATION LEVEL	Illiterate	10	0.008	7	0.019	10	0.134	11	0..006	3	0.002	3	0.010	4	0.122	6	0.000	4	0.008
	Primary School	53		57		37		37		13		18		17		15		9	
	Intermediate	53		43		37		19		16		25		9		9		24	
	Secondary	20		14		20		10		19		3		12		20		10	
	University	52		37		17		23		13		6		9		18		6	
ECONOMIC STATUS	Poor	68	0.581	62	0.043	38	0.189	44	0.035	25	0.454	18	0.599	22	0.047	19	0.000	16	0.668
	Satisfied	107		79		69		46		36		34		29		35		33	
	Rich	13		17		14		10		3		3		0		14		4	
LIVING CIRCUMSTANCES	Live with Family	172	0.749	149	0.005	105	0.078	87	0.158	57	0.346	55	0.041	47	0.031	60	.000	47	0.048
	Live with Relatives	7		0		7		4		4		0		4		8		0	
	Alone	9		9		9		9		3		0		0		0		6	
RELIGION	Muslim	181	0.029	151	0.067	118	0188	94	0.025	61	0.683	51	0.362	48	0.630	65	0.672	49	0.332
	Christian	4		4		3		3		3		4		3		3		4	
	Other	3		3		0		3		0		0		0		0		0	

		SLEEP		AGGRESSION		RESTLESS		SPEECH		SUSPICIOUSNESS		SOCIAL WITHDRAWAL		SOMATIC COMPLAINTS		ANXIETY		ODD BEHAVIOR	
		No.	P	No.	P	No.	P	No.	P	No.	P	No.	P	No.	P	No.	P	No.	P
SOURCE OF REFERRAL	Family Referral	149	0.000	127	0.000	95	0.000	77	0.029	35	0.001	28	0.001	28	0.000	41	0.002	34	0.005
	Relative	13		7		9		7		17		15		20		17		13	
	Physician	11		18		17		10		3		6		3		10		0	
	Faith healar	12		3		0		6		6		6		0		0		3	
	Court Referral	3		3		0		0		3		0		0		0		3	
REACTION OF FAMILY	Accepted	134	0.000	118	0.008	83	0.405	77	0.529	47	0.221	37	0.352	35	0.291	60	0.003	30	0.000
	Denil	3		16		9		6		7		6		6		0		10	
	Rejected	51		24		29		17		10		12		10		8		13	
FAMILY HISTORY	Negative	93	0.058	84	0.780	67	0696	43	0.008	35	0.897	31	0.695	31	0.288	47	0.005	32	0.306
	Positive	95		74		54		57		29		24		20		21		21	

Table 3: The correlation between the prodromal symptoms and signs and the sociodemographic and clinical variables of the study group

Discussion

One of the methodologies employed in the past to investigate the prodromal phase of schizophrenia is the detailed, retrospective reconstruction from patient and information interviews and other information sources of changes from the patient's previous personality, through the first prodromal symptoms to frank psychosis. This method was used by Bleuler (1950) [17], Kraepelin (1921) [18], Conrad (1958) [19], Meares (1959) [20], Bowers and Freedman (1966) [21], Bowers (1968) [22], Stein (1967) [23], Fish (1976) [24], Docherty Pocherty *et al.* (1978) [25], Huber *et al.* (1980) [26], and more recently Harness groups (Hafner *et al.* 1992a, 1992b, 1993, 1994; Hambrecht *et al.* 1994) [27-31], and Beiser *et al.* (1993) [32]. The main prodromal signs and symptoms founded by this study that preceding the development of a full blown picture of the first episode schizophrenia were; lack of sleep, aggression, restlessness, disorganized speech, anxiety, suspiciousness, social withdrawal, odd behavior, and somatic complaints.

Lack of sleep (57.3%)

Significantly correlated with; age, gender, marital status, education level, religion, the source of referral, and the reaction of the family. Sleep disturbance was described by; Cameron (1938) [33], Bowers and Freedman (1966) [21], Bowers (1968) [22], Donlon and Blacker (1973) [34], Huber *et al.* (1980) [26], Heinrichs and Carpenter (1985) [35], Birchwood *et al.* (1989) [36], Hafner *et al.* (1992a) [27], Hambrecht *et al.* (1994) [31], Yung and McGorry (1996) [37], Ferrarelli (2015) [1].

Aggression (48.1%)

Significantly correlated with gender, marital status, occupation, education level, economic status, living circumstances, the source of referral, and the reaction of the family. Aggressive, disruptive behavior was described by; Cameron (1938) [33], Meares (1959) [20], Varsamis and Adamson (1971) [38], Heinrichs and Carpenter (1985) [35], Subotnik and Nuechterlein (1988) [39], Birchwood *et al.* (1989) [36], Hafner *et al.* (1992a) [27], Hambrecht *et al.* (1994) [31], Yung and McGorry (1996) [37], Gourzis *et al* (2002) [10], Pompili and Fiorillo (2015) [40].

Restlessness (36.8%)

Significantly correlated with gender, marital status, occupation, living circumstances, and source of referral. Restlessness was described by; Chapman (1966) [41], Fish (1976) [24], Birchwood *et al.* (1989) [36], Hafner *et al.* (1992a) [27], Hambrecht *et al.* (1994) [31], Yung and McGorry (1996) [37].

Disorganised speech (30.4%)

Significantly correlated with the occupation, education level, economic status, religion, the source of referral, and family history of mental illness. Speech abnormalities was described by; Chapman (1966) [41], Cutting (1985) [42], Hafner *et al.* (1992a) [27], Hambrecht *et al.* (1994) [31] Yung and McGorry (1996) [37], Gourzis *et al.* (2002) [10].

Anxiety (20.7%)

Significantly correlated with education level, economic status, living circumstances, the source of referral, the reaction of the family, and family history of mental illness. Anxiety was described by; Cameron (1938) [33], Meares (1959) [20], Bowers and Freedman (1966) [21], Chapman (1966) [41], Varsamis and Adamson (1971) [38], Donlon and Blacker (1973) [34], Fish (1976) [24], Docherty *et al.* (1978) [25], Herz and Melville (1980) [43], Huber *et al.* (1980) [26], Heinrichs and Carpenter (1985) [35],

Subotnik and Nuechteriein (1988) [39], Birchwood *et al.* (1989) [36], Hafner *et al.* (1992a) [27], Hambrecht *et al.* (1994) [31], Yung and McGorry (1996) [37], Gourzis *et al.* (2002) [10].

Suspiciousness (19.5%)

Significantly correlated with age, marital status, occupation, education level, and source of referral. Suspiciousness was described by; Conrad (1958) [19], Stein (1967) [23], Varsamis and Adamson (1971) [38], Heinrichs and Carpenter (1985) [35], Subotnik and Nuechterlein (1988) [39], Birchwood *et al.* (1989) [36], Hafner *et al.* (1992a) [27], Hambrecht *et al.* (1994) [31], Yung and McGorry (1996) [37], Gourzis *et al.* (2002) [10].

Social withdrawal (16.7%)

Significantly correlated with age, marital status, education level, living circumstances, and source of referral. Social withdrawal was described by Cameron (1938) [33], Meares (1959) [20], Chapman (1966) [41], Donlon and Blacker (1973) [34], Docherty *et al.* (1978) [25], Birchwood *et al.* (1989) [36], Hafner *et al.* (1992a) [27], Hambrecht *et al.* (1994) [31] Yung and McGorry (1996) [37], Gourzis *et al.* (2002) [10].

Odd behavior (16.1%)

Significantly correlated with age, marital status, occupation, education level, living circumstances, the source of referral, and the reaction of the family. Odd behavior was described by; Conrad (1958) [19], Meares (1959) [20], Birchwood *et al.* (1989) [36], Yung and McGorry (1996) [37], Gourzis *et al.* (2002) [10].

Somatic complaints (15.5%)

Significantly correlated with age, marital status, occupation, economic status, living circumstances, and source of referral. Physical symptoms and somatic complaints was described by; Bleuler (1950) [17], Cameron (1938) [33], Meares (1959) [20], Offenkrantz (1962) [44], Chapman (1966) [41], Varsamis and Adamson (1971) [38], Donlon and Blacker (1973) [34], Fish (1976) [24], Herz and Melville (1980) [43], Huber *et al.* (1980) [26], Heinrichs and Carpenter (1985) [35], Subotnik and Nuechterlein (1988) [39], Hafner *et al.* (1992a) [27], Hambrecht *et al.* (1994) [31], Yung and McGorry (1996) [37], Gourzis *et al.* (2002) [10].

This study explores the importance of the prodromal signs and symptoms preceding the development of full blown first schizophrenic episode. It is important for developing country like ours to educate the patients' families about prodromal symptoms of schizophrenia since most patients live within their families, hope this study take part in raising the awareness of these symptoms. Psycho-educational approach to the patient and family throughout available media may be mandatory to increase the awareness about schizophrenic prodromal symptoms to reduce the duration of untreated psychosis and allow therapeutic intervention to prevent the development of a full blown picture of a schizophrenic episode. Further studies on the mode of onset, presentation, the early course of schizophrenia were recommended.

Limitations

Selection bias cannot be excluded as the study was conducted in a specialized center.

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