

Epidemiology to Phenomenology of Delusional Disorder in Late Life

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Abstract: Delusions and paranoid ideation are common in the elderly, and they pose a diagnostic and clinical challenge. Delusional disorder accounts for 1% of inpatient psychiatric hospital admissions. Female gender, sensory deficits, lower socioeconomic status, social isolation and immigrant status have been identified as risk factors. Among the various subtypes of delusional disorders, delusional parasitosis is seen more frequently in the elderly population, especially in females. There are well organized delusions, but no manifest perceptual disturbances, personality deterioration, or a formal thought disorder. To diagnose delusional disorder the clinician must rule out delirium, dementia, psychotic disorders due to general medical conditions or substance use, schizophrenia, mood disorders with psychotic feature. Atypical antipsychotics are the first-line treatment for older patients because of the improved side effect profile compared with conventional antipsychotics along with psychotherapy and supportive measures.

Keywords: Paranoia, Late Paraphrenia, Late onset schizophrenia, Partition delusion, Ekblom syndrome, late life Psychosis.

INTRODUCTION

Kraepelin [1] described 4 subtypes of paranoia - erotomania, paranoid jealousy, megalomania and a possible hypochondriac form. Kraepelinian view of Paranoid Disorder was not well accepted and most of the English speaking Psychiatrists did not accept this as a separate illness.

Winokur [2] re-described Paranoia as Delusional Disorder. By 1982 Winokur, Kendler and Munro concluded that despite much confusion since Kraepelin's death Paranoia existed and is much less rare, readily diagnosable and treatable than earlier believed. DSM III-R [3] revived Paranoia as Delusional Disorder. ICD 10 [4] and DSMIV [5] gave official recognition to Delusional Disorder that resembles largely with the Kraepelinian Paranoia.

EPIDEMIOLOGY

Significant under-reporting of paranoid ideation is likely because elderly psychotic individuals are often suspicious about revealing their concerns. Nosological inconsistencies, lack of functional impairment, difficulty in differentiating Delusional Disorder (DD) from Delusions in other disorders and relative infrequency have all led to lack of large population based studies. Until recently, there were only two general population studies on the prevalence of delusional disorders – Kendler [6], Copeland [7].

The rate for inpatient admissions was reported as 0.3-0.5% by Winokur [2] and as 1-4% in a subsequent literature review by Kendler [6]. A German study [8] of hospital statistics reported .5% prevalence

of DD. Indian Studies on outpatients reported the prevalence of DD as – Srinivasan [9]. 5% and Hebbar [10] 1%. The lifetime morbid risk of DD in the general population has been estimated to range from 0.05 to 0.1 percent by Manschreck TC [11] 2000. Perälä *et al.* [12] in 2007 examined a nationally representative sample of 8028 persons in Finland and reported a prevalence rate of 0.18% for DD.

DEMOGRAPHY

Perala *et al.* [12] reported a later age of onset for DD. Yamada *et al.* [13] in a study from Japan reported the oldest age at onset for the persecutory type and the youngest for the somatic type. Tandon *et al.* [14] (76) found majority of patients with delusional parasitosis were over 50 years of age. Average age of onset is earlier for men (40 to 49) than for women (60 to 69).

Munro and Mok [15] in a meta-analysis of DD found female to male ratio of 3:2. Recent studies [16] have reported that for DD first admissions females outnumber males. The HADES [17] Study from Germany did not find any significant differences in gender distribution in the DD patients (51.2% male's vs 48.8% females). Hebbar [10] *et al.* reported Male to

female gender ratio was 1.3:1. Grover *et al.* [18] reported female preponderance (56%) in a study from north India. 32% DD cases were found to be never married compared to 50-69% patients with schizophrenia [19].

A broken home situation was found to be less frequent in patients with DD than in patients with Paranoid Schizophrenia M [17]. Family History of mental illness was less in DDM [17]. The DD cases were reported to be more educated than Schizophrenia cases M [6]. Winokur [2] also reported the DD cases to have a satisfactory work history compared to the cases suffering with schizophrenia. Kendler also reported that cases of DD were more likely to be foreign born [20]. Most common precipitating factors in DD group were social isolation and conflict with conscience [21]. Premorbid personalities in DD are mainly Hypersensitive, Avoidant, Obsessive and Dependent [21, 14].

CLINICAL MANIFESTATIONS

Social isolation has been cited [22] as a factor that may predispose a vulnerable elderly person to persecutory ideation. Weeks [23], concluded that social isolation and loneliness lead to negative interpretations of the actions and intentions of others. Sensory loss has been proposed in a number of studies [24] as a possible aetiological factor in the emergence of Delusions. Role of antidopaminergic function of estrogen has been proposed by Hafner *et al.* [25] as a possible cause for delayed onset of delusion in females. Catalano *et al.* [26] studying genotype of DD, found that involvement of genetic variation in the Dopamine D4 receptor gene confirmed susceptibility to DD. Psychodynamically, Defensive response to profound threat to self has been proposed as the underlying factor.

Non bizarre delusions, ie involving situations that occur in real life of at least one month's duration (DSM V) / 3 month's (ICD 10). Absence of-- First Rank symptoms, Formal thought disorder, Gross behavioral abnormalities, marked social/occupational impairment are the characteristic features. Delusions constitute the most conspicuous or the only clinical feature. Depressive symptoms may be present intermittently but doesn't fulfill the criteria for full blown depressive disorder. Transitory hallucinations related to delusional theme may be present. Usually it is a Monomania [27], Delusions have a single theme. Delusions are encapsulated also called Partition Delusions [28]. It is a Primary disorder without much deterioration in Personality, Affect, functioning and absence of Negative symptoms.

Kraepelin believed that Persecutory type was most common followed by Delusions of Jealousy, Grandeur and Eroticism. Munro worked extensively on Hypochondriacal Delusions and at present both ICD 10 and DSM V recognized this as DD Somatic type.

Delusion of Infestation is particularly prevalent in Indian Patients. Hebbbar *et al.* [10], reported .5% cases of Delusional Parasitosis, 21 out of 4234 Psychiatric outpatients. Srinivasan *et al.* [29], has found similar prevalence of 19 out of 4200 outpatients.

PERSECUTORY

This is the commonest type also known as querulous paranoia, litigious paranoia. Individual is convinced that he/she is being harmed and believes that he is conspired against & harassed, spied or followed or poisoned by others. Associated with querulousness, irritability, anger or even Homicide. They are resentful, may resort to legal methods in order to be redressed. Pearlson *et al.* [30] defined the classical Persecutory Delusion in elderly as "the delusion that people, gas, electricity, or some other force was entering their home from a neighbouring dwelling". This type is common among Minority community and Immigrants.

JEALOUS

Jealousy is as old as Mankind. Feelings of Jealousy can fall on a continuum from normal Jealousy to Delusional Jealousy. Commonest Delusion of Jealousy is Delusion of Infidelity. Association with Cocaine/Alcohol has been proposed by Shepherd *et al.* [31]. Forensic aspect of Delusion of Jealousy is important. Mowat [32], reported that 12% males and 15% females of criminally insane murderers had Delusion of Jealousy. According to Freud - unconscious homosexual feelings basis for Delusion of Jealousy. Some amount of infidelity may be there but magnitude of the response and the "Evidence" accumulated may be Delusional in nature.

One of the causes of sexual jealousy is the old age of the husband [33]. Bhugra [34] points out that both males and females are prone to jealous feelings and behavior. Insecurity, inadequacy, dependence, and past experiences also play a key role. Somasundaram [35], studied 41 murderers who killed their wives and found 17 had Delusion of Jealousy. Kala *et al.* [36], studied Fifty cases of Delusion of Jealousy and found that 32% had onset after 50 years, 50% had onset after 20 years of marriage, Females outnumbered males, Devrani or Devar were usually suspected, 34% had sexual maladjustment before the onset. Vauhkonen [37] found more than 50% of the patients had a history of sexual dysfunction.

SOMATIC

Theme of Delusions is Hypochondriacal or Somatic in nature. Munro [38, 39] did seminal work on series of patients and termed the illness as MHP. Three types have been described - Delusion of Infestation, Dysmorphic Delusion and Delusion of body odor. These patients rarely present for Psychiatric evaluation. These patients are more often seen by specific specialists. Delusional parasitosis [40] is seen more

frequently in the elderly population, especially in females.

Delusional Parasitosis is characterized by the unshaken belief of being infested by a Parasite also called EKBOM Syndrome. Parasites [41] may be macro parasites like helminthes or smaller parasites like virus or bacteria. Tactile hallucinations of crawling or burrowing into skin --Tucci V 2009. Discrete bruises, nodular pruritis, ulcers, and scars are frequently produced by patient trying to extract the parasite--- Alves CJ 2010. They may even bring dust, fibers, scab, or debris excoriated from the skin as evidence for inspection in, for example, a matchbox, often called as "match-box sign"[42]. Tandon *et al.* [14] studied 48 patients with delusional parasitosis and reported that 79% had onset after 50 years and male to female ratio 5:7. Illness was predominantly present in farmers 39.6% and labourers 16.6% the disease was distinctly more common in the illiterate 81.2%. Commonest personality traits were obsessional and hysterical.

Srinivasan [43] reported seven cases of Delusional Parasitosis in whom there was a predominant involvement of nine orifices - eyes, ears, nostrils, mouih, anus and urethra. Influence of the Hindu religious and cultural belief system attaches special significance to these orifices with respect to physical, mental and spiritual well-being. Kiev [44] pointed out that the secondary features of psychiatric illness, such as the content of delusions and hallucinations are frequently determined culturally. For the Hindu, the body is a "dwelling with nine doors" comprising the nine orifices, called NAVADWARAS .The orifices are portals of communication between body, the soul, and the surrounding physical and spiritual world. The everyday activities prescribed for a Hindu reflect the religio-cultural significance of the nine organs. It is argued that such a deeply entrenched religio-cultural belief and practice system as that of the Hindu can find expression in the production of a psychopathological symptom [45].

Body dysmorphic disorder (BDD) previously known as 'dysmorphophobia' is defined as a preoccupation with an imagined defect in one's physical appearance. If the preoccupation with an imagined defect in appearance is held with a delusional intensity then it will be considered a delusional disorder. One of Freud's [46] patients was known as the 'Wolfman' and he was preoccupied with imagined defects on his nose. They spend many hours focusing on their physical features and engaging themselves in time-consuming behaviors e.g. Shaving. Typically thinks about their perceived deformity for at least an hour [47]. Comparing, Excessive Grooming, Camouflaging, Dieting, Surgeries.

"Delusion of pregnancy" is described as delusional disorder somatic type. A review by Bera and

Sarkar [48] reported 84 cases of Delusion of Pregnancy with about 1/4th cases with onset after 50 years. A case of Delusion of Pregnancy in a 70 year old male [49] after a homosexual encounter, who believed that he was getting converted into a female, started noticing bodily changes such as enlargement of his breasts, trying to hide them by wearing loose clothes, would repeatedly check his body parts in mirror. Psychodynamically, development of delusion of pregnancy in man has been construed as man's expression of frustrated creativity, his deep-rooted infantile envy of his wife's ability to bear a child and dramatic expression of identification with his mother [50].

Delusions of foul body odors also known as olfactory reference syndrome fall under the category of delusional disorder, somatic type. Misinterpret others' behaviors, e.g. sniffing, touching nose or opening a window, as being referential to an unpleasant body odor which in reality is non-existent and cannot be detected by other people. The individual may report that the odor comes from: the nose and/or mouth, i.e. halitosis (bad breath), the anus, the genitals, the skin generally or specifically the groin, armpits or feet. The character of the odor may be reported as similar to bodily substances, e.g. feces, flatus, urine, sweat, vomitus or alternatively it may be an unnatural, non-human or chemical - ammonia, garbage, rotten onions and burning fish [51].

EROTOMANIC

Enoch and Trethowan [52] have shown, cases of apparent Erotomania have been described since classical times. Kraepelin's typical patient was a middle aged female disappointed in love. Kretschmer [53] developed this stereotype of old maids developing a Psychosis due to unrequited love and Hart [54] termed "Old Maid's Insanity". The Psychiatrist most identified with Erotomania is de Clerambault. Erotomaniac Delusions [55] in men are more dangerous and they are more likely to act out their Delusions. Cases of Homosexual Erotomaniac Delusions also reported [56]. The term erotomania is used to designate the delusion that a person of higher social standing loves the patient.

This disorder is most often seen in female patients that are shy, dependent, and sexually inexperienced. The object of the delusion is typically a male [57] who is unattainable due to high social or financial status, marriage, or disinterest. Men are more likely to exhibit violent and stalking behaviors. Denial is characteristic with this disorder as the patients do not accept the fact that their object of delusion may be married, unavailable, or uninterested. The phantom lover may also be imaginary or deceased.

GRANDEUR

Delusions of inflated worth, power, knowledge, identity, or special relationship to a deity or famous person. This is not common. Hebbard *et al.* [10] reported no case of Delusion of Grandiosity out of 45 cases of Persistent Delusional Disorder. Also known as Megalomania, Ambitious paranoia, Folie des Grandeurs.

Course and outcome

In the first phase of the HADES study, all consecutive cases of PDD treated as inpatients at the Martin Luther University Halle-Wittenberg, Germany, between 1994 and 2008 were identified. 43 patients fulfilled the inclusion criteria during the study period. Follow-up investigations took place at 10.8 ± 4.7 years after onset of the disorder or 6.6 ± 3.8 years after the index hospitalization. At the time of follow-up, only 7 patients refused consent, 3 had died, and the remaining 33 subjects were interviewed. DDs showed a remarkable diagnostic stability over time. Only 7 patients (21.2%) of the DD group shifted into schizophrenia or schizoaffective disorder during a period of 10.8 years. All patients with syndrome shift but one were men; females showed a higher diagnostic stability.

73% patients with DD did not have subsequent hospitalisation. Much more patients with DD were employed, and they had significantly lower rates of

early retirement due to their mental disorder. Most patients with DD (88.5%) retained their autarky. The outcome parameters are significantly more favorable for DD than for Paranoid Schizophrenia (PS) patients. Generally, mean outcome was more favorable for DD than for PS. Social disability was significantly more pronounced for PS. DD patients had significantly lower score on DAS global score.

Almost half of the patients remain unimproved [58], one fourth patients fully recover and another one fourth will convert into Schizophrenia or Mood Disorders.

DIFFERENTIAL DIAGNOSIS

DD being uncommon and possessing some characteristics of the full range of paranoid illness, it is clearly a diagnosis of exclusion. To diagnose delusional disorder the clinician must rule out delirium, dementia, psychotic disorders due to general medical conditions or substance use, schizophrenia, mood disorders with psychotic features, significant organic brain syndrome [59]. Ruling out secondary causes of psychosis is important because the causation of psychosis by a medical disorder or substance can dramatically change management and prognosis. Variety of medical diseases can present with delusions in elderly. The temporal pattern of the symptoms onset remains the most important factor in making the diagnosis.

Table-1: Differential Diagnosis for delusional disorder (Adapted from Manschreck, 1996)

Disorder	Delusions	Hallucinations	Awareness	Other features
Delusional disorder	+	Occasional	Alert	Relatively free of psychopathology
Psychotic disorder due to a general medical condition, with delusion	+	+	May be impaired	Cognitive changes; perceptual changes; substance abuse history; impairment of functioning frequent
Substance-induced psychotic disorder	+ (can be bizarre)	+	Acute: impaired, Chronic: may be alert	History of substance abuse; impaired functioning likely
Schizophrenia	+ (bizarre)	+	Alert	Emotional changes, pervasive thought disorder; role impairment
Major depressive episode	+ (usually mood congruent)	±	Alert	Concerted changes in mood and neurovegetative features
Manic Episode	+ (usually mood congruent)	±	Alert	Concerted changes in mood, decreased need for sleep, energy, lack of inhibition
Obsessive–Compulsive disorder	-	-	Alert	Not psychotic; impaired functioning likely
Personality disorder	-	-	Alert	Not psychotic

Medical Conditions

Metabolic conditions associated with Delusion include – Vitamin B12 deficiency, Electrolyte abnormalities, acute intermittent porphyria, Hepatic encephalopathy, Uremic encephalopathy. Infections

like Meningitides, Encephalitides (herpes), Neurosyphilis, HIV. Neurological - Temporal lobe epilepsy, Grand mal, Subdural hematoma, Cerebrovascular events, Huntington’s disease, M S, A L S, Tumors. Immunological - Paraneoplastic

syndromes, SLE, Vasculitides. Endocrine – Thyroid, Adrenal diseases and Hypo/hyperparathyroidism.

Delirium

Typically occurs in medical, surgical illnesses and has an acute onset, fluctuating and reversible course. Delusions and hallucinations are more common in hyperactive subtype. Delirium broadly has: “Core” symptoms-disturbances of attention, memory, orientation, and sleep-wake cycle; and “associated” features like Delusion, hallucinations and affect disturbances. In India, delirium is the most common diagnosis among geriatric psychiatric referrals (49%) [60]. The prevalence of delusion (35-40%) and hallucinations (80%) remained substantially high in elderly patients with delirium [61].

Dementia

The frequency of delusion [62] varies between 10% and 73%. There is evidence from the history that the Delusions have not been present continuously prior to the onset of symptoms of dementia. The most commonly reported delusions are persecutory. Delusional misidentification syndromes,” such as Capgras syndrome and the “phantom boarder” delusion are common in DLB [63]. Delusions and Hallucinations in Dementia cause more caregiver stress.

Medications

Secondary Delusions are also seen as a side effect of medications like - like corticosteroids, dopaminergic drugs, stimulants, Anticholinergics. Antibiotics - Ciprofloxacin, Antivirals: Acyclovir, Antineoplastics (ifosfamide) have been implicated [64]. Alcohol and sedative hypnotics can lead to psychosis during intoxication (rare), as well as during withdrawal (common). Alcoholic hallucinosis or pathological jealousy can develop with long-term alcohol abuse. Stimulant drugs (methamphetamine) and psychotomimetics (lysergic acid diethylamide, phencyclidine) as well as cannabis commonly cause Delusion [65].

MANAGEMENT

The goals of treatment are to establish the diagnosis, to decide on appropriate interventions, and to manage complications.

Rule out organic and environmental causes of DD e.g. deafness, poor vision, chronic pain, dehydration, deranged metabolic functions and constipation, medications that can cause/aggravate. Evaluate potential risks due to side-effects and benefits of symptom relief with the use of antipsychotics [66]. A detailed history, Physical Examination, Neurological Examination, Mental Status Examination, assessment of impulsivity, Medication and Drug abuse history and necessary investigations should be done.

Interview techniques for patients with sensory or cognitive impairment should be appropriately

modified to reduce inducing anxiety or irritability, for e.g. by talking slowly and by explaining the nature and rationale of the assessment [67].

Medication History

All the medicines taken by the patient should be reviewed including OTC medicines, alternative medicine treatments.

Family History

It is useful to draw a 3-generation genogram of the family of the patient - family’s socioeconomic status, social supports, knowledge and attitudes of the family members towards patient’s condition.

MSE

The mental status examination of the elderly psychiatric patient is crucial to the diagnosis. It is prudent to gently and specifically ask about ideas of Suicide. Must include a reasonable bedside assessment of cognitive functions – Clock Drawing Test.

Physical

Special attention is directed toward visual or hearing impairment, cortical release signs and neurological deficits that may be a sign of neurological disease.

Functional Status

Functional status (ADL and IADL) is probably most accurately evaluated by direct observation in Home situations.

S & E Status

Identifying present and potential caregivers and assessing their competence.

Environmental

Home visits are used to determine the safety, physical barriers and access to services.

Assessment Tools for India

- Cognitive – Cognitive screening battery [75]
- ADL - Everyday Activities Scale for India [76]

Due to process of ageing Elderly patients are suffering from other physical illnesses and often receive multiple medications. Drug interactions and dosage must be considered when selecting a drug. Assess social isolation or sensory deprivation. Provide optimal environmental and supportive interventions.

Munro & Mok [68] reviewed approximately 1000 articles on delusional disorder from 1961 onwards. For Pimozide they found 68.5% cases as fully recovered and 22.4 % as partially recovered; the contrasting data for other antipsychotics was 22.6% full recovery, 45.3% partial recovery - the difference was significantly in favour of pimozide ($p < 0.001$).

More than 60% of patients had moderate to good improvement with different antipsychotics (HPL, PMZ and RISP) [10]. Extrapyramidal and anticholinergic side effects, drug interactions and the risk of tardive dyskinesia is markedly greater in elderly patients taking antipsychotic medication [69].

Introduction of atypical antipsychotic agents, such as risperidone, olanzapine and quetiapine, has markedly reduced these iatrogenic consequences of treatment [70]. The first choice treatment for elderly now considered to be safe and effective are atypical antipsychotics due to their better side-effect profile in comparison with conventional antipsychotics [66]. Narayana Gowda *et al.* [71] and Navin *et al.* [72] reported good outcome with Risperidone and Olanzapine in elderly patients with DD.

Patients with DD can generally be treated as outpatients, but consider hospitalization for several reasons - complete medical and neurological evaluation, assessment of their ability to control violent impulses and to stabilize social or occupational relationships. Optimal duration of treatment with antipsychotic medications largely depends upon residual clinical picture and psychosocial context of the patients and clinical judgment of treating psychiatrist. START LOW GO SLOW.

The essential element in effective psychotherapy is to establish a relationship in which patients begin to trust a therapist. Individual therapy seems to be more effective than group therapy; supportive, cognitive, and behavioral therapies are often effective. Initially, a therapist should neither agree with nor challenge a patient's delusions. The goal is to develop a solid and trusting relationship.

The goals of supportive therapy are to allay anxiety and initiate discussion of troubling experiences thereby gradually developing collaboration with the patient [11]. The ultimate goal is to help patients entertain the possibility of doubt about their Delusions. When a patient allows feelings of vulnerability to enter into the therapy, a positive therapeutic alliance has been established.

Psycho-education has to be provided to the patient and the care givers regarding disease, course of illness, treatment options, and regular follow up.

Cognitive approaches have attempted to reduce delusional thinking through modification of the belief itself. Simon *et al.* [73] reported that a third of their DD patients when treated with cognitive therapy for delusional modification, responded with a reduction in the degree of belief.

A novel approach of an integrated cognitive behavioural and social skills training intervention for

elderly was developed, it reduces their cognitive vulnerabilities and improves stress coping [74].

CONCLUSION

Since the introduction of the term paranoia by Kahlbaum in modern psychiatry, the concept of paranoia/DD has kept on changing over the years and it has not crystallized fully as yet. Limitations to research are - low incidence, small sample sizes, lack of insight and low impairment in these patients thereby hindering treatment seeking. Delusional Disorder is a distinct illness and has five subtypes. Delusions in the elderly may be caused by - delirium, dementia, psychotic disorders due to general medical conditions or substance use schizophrenia, mood disorders with psychotic features. Combination of pharmacotherapy and psychotherapy is the best choice.

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