SECTION SIX

KORO AND PSYCHIATRIC MORBIDITY

CHAPTER – 1

KORO AND SCHIZOPHRENIA

CHAPTER – 2

KORO AND DEPRESSION

CHAPTER – 3

KORO AMONG KINSHIP

KORO IN SCHIZOPHRENIA WITH FOUR CASE REPORTS

SUMMARY

Koro symptom at the background of schizophrenic illness is not uncommon. A global literature search on this issue is pointing towards a considerable association between the two. Different aspects of the nosological proposition of Koro, either as an independent phenomenon or as an extension of schizophrenic bodily (sexual) delusional process, is discussed. Four cases of Koro with schizophrenia is also reported.

Koro as a syndrome has three essential components, namely, that the penis is retracting or shrinking (breast and labia in females); that it will disappear into the abdomen with eventual death and an acute anxiety with deep-seated fear always accompanies these perceptions. Though originally Koro was regarded as a culture bound psychogenic illness (Yap, 1965a; Gwee, 1968), a number of documented cases in recent years is pointing towards organic and secondary psychopathological associations (Durst & Rosca-Rebaudengo, 1988). Devan and Hong (1987) judiciously suggested a three-tier classification of Koro syndrome. These are : (a) Classical Koro-occurring as a typical culture-bound phenomenon; (b) Koro grafted upon an underlying primary psychiatric illness and (c) Koro as a symptom of mental illness. This classification may further be displayed in relation with the recent findings on Koro as follows :

1. Primary Koro Syndrome - i.e. culture-bound expression;

2. Secondary Koro Syndrome-

   a) Organic - i.e. with CNS lesions, drug induced.
   b) Psychiatric - i.e. with Major psychiatric illness.

Review of the global literature shows a definite trend in this respect (Table 1).

Table 1 : Etiological Distribution of Koro

1. Primary Culture-bound Koro Syndrome :

This involves the expression of the discrete cultural-ethnic groups usually in epidemic form, e.g. in China, Thailand, Singapore, Indonesia and India. A cultural belief or myth plays a major role in the expression and spread of the disease in the community e.g. poisoning of food staffs, beverages and tobacco in Thailand Koro epidemic. (Jilek & Jilek, 1977); contaminated pork in Singapore epidemic (Ngui, 1969); fox spirit in Hainan Island epidemic of China (Prince, 1992) and body heat disturbances in India (Chowdhury, 1991a).

2. Secondary Koro Syndrome :

A. With CNS lessions e.g. fronto-temporal tumour (Lapierre, 1972); temporo-parietal pathology with dysrthythmia (Joseph, 1986); tumour of the corpus callosum (Durst & Rosca-Rebaudengo, 1988) cerebrovascular accident (Anderson, 1990).

Drug induced: like heroin (Yap. 1965a, Chowdhury & Bagchi, 1993); amphetamine (Yap 1965a; Dow & Silver, 1973), L-dopa (Chen, 1991) and cannabis (Chowdhury & Bera, 1993).

B. With a Primary Psychiatric Diagnosis

1. Schizophrenia (Yap. 1965; Rin, 1965; Edwards, 1970; Ede, 1976; Cremona, 1981; Shukla & Mishra, 1981; Ang & Weller, 1984; Devan & Hong, 1987; Chowdhury, 1990a).

2. Affective Disorders (Kraepelin, 1921; Bychowski, 1952; Yap, 1965, 1965a; Hes & Nassi, 1977; Ang & Weller, 1987; Anderson, 1990).

3. Anxiety Disorders - e.g. Agrophobia (Berrios & Morley, 1984), Panic atracks (Hes & Nassi, 1997; Barrett, 1978), Anxiety States (Chakraborty, 1982; Ifabumuyi & Rwegellera, 1985; Chowdhury 1990 a,b).

4. Other Psychiatric Disorders - e.g. Capgras syndrome (Smyth & Dean, 1992); Hypochondriasis (Rosenthal & Rosenthal, 1982).

SCHIZOPHRENIA AND KORO

Review of the Koro literature reveals that quite a handful of cases are reported to emerge from a schizophrenic background (Table 2).

Table 2 : Koro with Schizophrenia

Author (Year)	Diagnosis	Number of Cases
Yap (1965a)	Schizophrenia	6
Rin (1965)	Paranoid Schizophrenia	1
Edwards (1970)	Schizophrenia	1
Ede (1976)	Paranoid Syndrome	1
Cremona (1981)	Schizophrenia	1
Shukla & Mishra (1981)	Florid Psychotic State	1
Ang & Weller (1984)	Schizophrenia	1
Devan & Hong (1987)	Schizophrenia	1
Chowdhury (1990a)	Schizophrenia	4
	Paranoid Schizophrenia	7

Yap (1965) described Koro in six male cases in the background of schizophrenic illness. No further details of these cases were reported. Among his 19 cases, Yap found tthe association of psychotic illness history in three only. One of them had a history of "brief psychotic illness" at the age of 14 years, the exact diagnosis of which was not known. In second and the third situation, the Koro was noted in a psychotic background, which he termed "psychogenic phychosis". One patient suffered from paranoid ideas ("made ill by his employer") and the other had "florid delusions" (a woman, wife and mother-in-law poisoned him). In both the above cases the psychotic spell was too brief and complete recovery was noted with medicines, psychotherapy and modified insulin therapy within 2-3 weeks of treatment.

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Rin (1965) described a Koro case with a diagnosis of paranoid state. A 39 year old married man of Kaingsu province of Central China was presented with ideas of reference, ideas of being poisoned and hypochondrical concerns. He also had multiple dysmorphophobic complaints like looseness of teeth, loosening of the whole body skin, sinking buttocks and swollen tonsils and throat. The persecutory delusional system was well systematized and elaborate. He experienced feelings of penile retraction, loosening of scrotal skin (which would make his testicles drop off) and dull pain in the left testicle. He also experienced the expanding sensation of penis during night.

The patient described by Rin was the only son of his parents and he had a very stormy childhood upbringing. The patient's father died when he was 11 years. The family atmosphere was very unhappy. His grand-mother had obsession-compulsive rituals. He had masturbation guilt in his teens and had deep belief in the cultural construct of semen (jing) energy as a vital body fluid. His married life was also very unhappy, conflict ridden and full of maladjustments. His overt paranoid ideas developed after some job stress and situational unfortunate incidents.

Edwards (1970) described Koro in a 40 year old American schizophrenic. The patient developed an obsessional preoccupation of his small penis size from the age of 18. His schizophrenic illness began at the age of 22. He also showed acute sensation of penile shrinkage during his schizophrenic course and surprisingly, at least once an association of Koro onset was found with the call by his real name.

Ede (1976) described a Koro case in a 21 year Canadian male who was unmarried, having 'inadequate' sexual adjustment history. His Koro fellings were associated with a paranoid syndrome at the background of a postoperative period of a coccygeal cyst surgery.

Cremona (1981) described a case of Koro in an young Englishman at the background of multiple psychopathology, who later

developed schizophrenic illness. When the patient was 12 year old he began cross dressing in his sister's clothes and started masturbation. At 14 he developed irrational fears, obsessive-compulsive symptoms, hypochondriacal concerns, labile mood, outbursts of violence, heavy drinking and recurrence of nocturnal enuresis (which persisted upto age eight). At 18 he experienced three consecutive failed attempts at intercourse and found himself impotent. This lead to further expansion of numerous fears, hypochondriacal distress and aroused a deep concern about something pathological with his penis. At age 21 he was admitted to a psychiatric facility for his severe anxiety and obsessional thought and rituals.

After his discharge, one day he suddenly felt his penis retracting during an afternoon walk. The Koro experience took a chronic course thereafter. He felt this 'shrinking' sensation all the time interspersed with daily acute panic episode when the penis become too small and disappeared. He become depressed and quite apprehensive of the social humiliation if his penis-shrinking becomes known to others. At the age of 23 he developed schizophrenic illness with threatful auditory hallucinations and feelings of being controlled. He was again admitted and treated with psychotropic drugs and during his follow-up for the next two years he showed no improvement in his acute episodic Koro feelings and distress.

Shukla and Mishra (1981) described a 'Koro-like' case in a 20 year single male. He had the experience of "penis and scrotum" were getting smaller with severe anxiety. He had a deep penile concern with "restless nights" with his "hands persistently in pockets, holding or manipulating his genitals". Though he responded well with anxiolytics and psychotherapy, he developed florid psychotic state with frank thought disorder after a month, when he shouted "no penis, no scrotum" repeatedly. He was admitted and neuroleptics with electro-convulsive therapy was given and he became symptom free after eight electro convulsive treatments.

Ang and Weller (1984) reported a Koro case in a 24 year West Indian immigrant to England who had a history of schizophrenic

illness five years before his Koro attack. He develop his 'penis-shrinkage' conviction after his difficulty in maintaining an erection when he masturbated. He also had the fear of turning into a female and belived that he was being influenced by two men who had the power of insertion and withdrawl of thoughts from his mind. Two of his sisters also had a history of schizophrenic illness.

Devan and Hong (1987) described a case of Koro in an elderly widower (75 years) from Singapore with schizophrenia and inguinal hernia. The patient has a history of post-retirement depressive attack with suicidal attempt. Subsequently he developed schizophrenic illness with strong persecutory delusion (directed towards the police and neighbours). The course of the schizophrenic illness extended for a period of over 12 years with intermittent remissions. At one midnight he developed the Koro symptoms after he had eaten bananas. Devan and Hong postulated that the presence of inguinal hernia in this solitary widower was a cause of his hyper-attention towards the genital area. The development of the Koro symptom was linked with a strong cultural belief attached to the bananas. Banana, a type of 'cold food' is regarded as a precipitant of penile shrinkage - this is a strong Chiness cultural belief since the time of Chin Dynasty (Gwee, 1970).

Chowdhury (1990a) reported four Koro cases with schizophrenia and seven cases with paranoid schizophrenia from the North Bengal Koro epidemic of India (Chowdhury et al, 1988). The diagnosis of the cases was done by MPQ (Multiphasic Questionnaire, Murthy, 1965) screening. Among the four schizophrenic cases, two had prior history of schizophrenic illness and antipsychotic treatment. In the other two cases, the psychiatric diagnosis was evident at the time of Koro attack, one of whom was from an inndustrial set up. The brief history of the four cases is given here.

Case 1

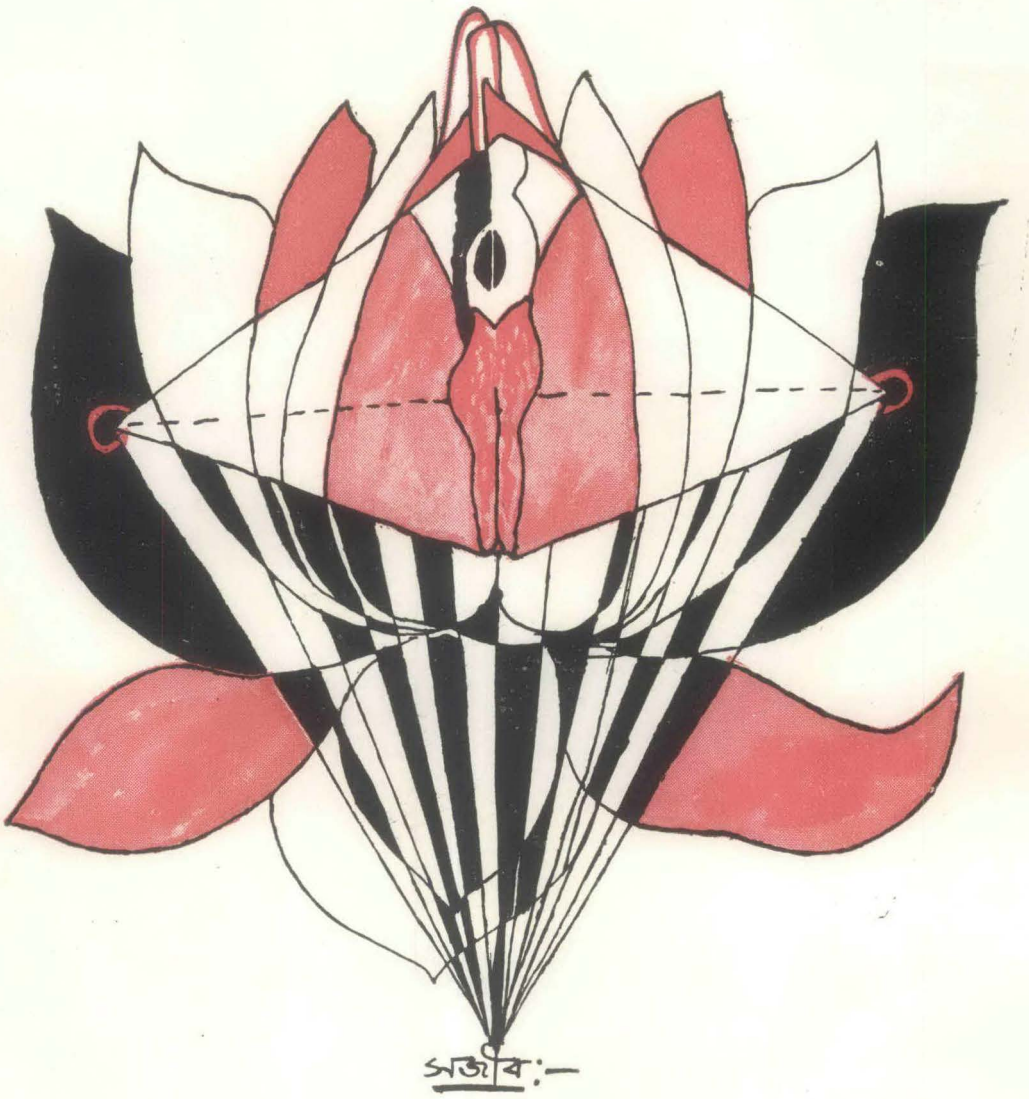
AB, 24 years, unmarried Bengali Hindu, educated upto class ten, worked as a helper in a small milk stall. He developed schizophrenic illness at the age of 21 years and was under psychiatric treatment with few relapses in between. His Koro attack occured

during such a relapse phase. He had some artistic abilities and used to draw sketches of human figure and natural scenes. He experienced acute penile shrinkage in one midnight while drawing such a sketch (Plate 1).

The incomplete drawing shows a religio-philosophical theme with erotic expression. The display of heterosexual union in the centre at the background of lotus petals, intermixed with multiple geometrical lines is clearly resembling the tantric art in mandala. The tantric art considers that the lotus is an archaic symbol- it is the first product of the creative principle (Mukherjee & Khanna, 1989). There are frequent uses of a definite number of lotous petals in tantric art eg. Sarva-saparipuraka Chakra (ring of 16 petals) or Sarva-sankshobana Chakra (8 petals) - both of which indicate the fulfilment of desire. The interwoven girdle of lotus petals usually symbolizes the 'spiritual rebirth' and the centre is the area of cosmic zone which represents the area of spiritual integration (Mukherjee, 1965).

The fifteen Bengali dialects written on the sketch are all beginning with the letter 'S'. The word at the pivotal point from where the different threads originate is Sajib meaning 'animate'. The words in the line below from left to right are respectively: Sath (honest), Subha (holy), *Sangjyam (self-abnegation), Subhra (white), Santa (tranquil), Sudha (nectar), Sura (Wine), *Swatittwa (Chastity), *Sakthi (strength), Sampa - probably mis-spelt (lightning), *Sham (restraint of passion), Siksha (learning); Sadhana (Worship) and Saphalya (Success). Words with asterix are expressions of sexual principles of morality, with a bit of erotic flavour. The display and abstraction depicted by the interplay of white, black and red colour probably represents the conflicts concerning the spirituality and erotic instincts with a failing super-ego influence.

The patient displayed prominent schizophrenic symptoms like auditory hallucination, ideas of reference, persecutory delusion and incongruent mood along with his Koro experience. The nature



সজীব:—

সৎ, শুভ্র, সংযম, শুদ্ধ, শান্ত, সুর্বা, সুরা, সতীত্ব, শক্তি, শঙ্খ, শম, নিমা, সাধনা, সাফল্য।

of the persecutory delusion was dircted towards unidentified neighbours who were allegedly in constant search for an opportunity to inflict some harm to him. He, time and again, expressed his sexual concern in the past in the midst of his schizophrenic illness. The concerns were mainly about his diminished 'sexual energy,' his irrational fear and anxiety of being impotent, though no reason of this was given by him. Once he blamed himself for the cause of primary infertility of his elder brother's wife. He held the idea that 'sexual energy and vitality' of human race is being controlled by an unknown magical force by cosmic rays. He explained the cause of the ongoing Koro epidemic as punishment by a "divine force" for the transgression of sexual morality by the people. He said that in recent times he noticed this "moral deterioration" of people in their faces and eyes. He explained his own case also as a punishment of "alert type" because, once, though for a little while, he looked towards the wife of his elder borther with "erotic vision". He never masturbated as he firmly believes that loss of semen causes ill health and this vital fluid packed with "worldly force" should not be wasted for mere bodily pleasure. He recovered from his Koro experience within a week with the increment of doses of trifluperazine, on which he was earlier put.

Case 2

CD, a 36 year old married riskshaw puller of Behari Hindu origin, has a history of schizophrenic illness of four years duration. He had undergone psychiatric treatment in the early part of his illness and discontinued treatment since last one year. He has family history of multiple psychiatric morbidity - mother was a schizophrenic. One borther absconded for fourteen years, one sister commited suicide by self-incineration. He developed acute Koro symptoms in the evening six hours after viewing a Koro attack in his next door neighbour's son.

Case 3

AC, a 26 year old unmarried bank employee, Muslim by religion, presented with acute Koro symptoms in the evening. He

developed his Koro pang while urinating in a public toilet when he suddenly felt the loss of sensation in the entire genital area, the flaccid, toneless, "thin" retracting penis and some pain in both the groins. He also had difficulties in the "expulsive force" of urination. He himself went to a physician immediately and explained his distress. An intramuscular injection of 5 mg diazepam was given and he reecovered completely from Koro symptoms after a deep and good sleep at night.

He was never seen by a psychiatrist before, nor had his family members sought treatment in the past. But after two days of remission, he developed self muttering, self-talking with different unusual motor gestures with imaginary persons and started touching the floor repeatedly while taking meals, often with food at his hand, in MPQ screening he was found to be well beyond the cut-off score for schizophrenia. His mental state examination showed a definite loosening of associations in his throught process, with a frequent application of the words "natural variety", devoid of its appropriate use or meaning in a dilect. He had no persecutory delusion or no hallucination. Rapport was poor.

Premorbidly the patient was a shy, introvert and quiet person. He once consulted a general practitioner for checking up wheather he is impotent or not, through he failed to explain the reason why he considered himself as a potentially impotent person. The physician prescribed some injection which he never tried because somehow it appeared to him that this injection would do more harm to him than good. He had no heterosexual exposure. He never masturbated, though he experienced quite a few occassions of wet dreams.

Case 4

Mr. C., 46 years Hindu married engine-operator at the Indian Oil Depot at Dhumdangi, West Dinajpur district (West Bengal), had been brought to the Emergency department of North Bengal Medical College Hospital at mid night in an excited state. His family members complained of his extreme restlessness, violent behavior (atteempting to bite others), intermittent self-laugh and

contineous whispering, self-talk and muttering, different hand and finger movements as if responding to imaginary person, refusal of food, complete insomnia and suspiciousness towads other including his wife as if they may do harm to him and cause physical invalidity by mixing poison with food.

The duration of these symptoms was ten days but since last evening before admission he complained of painful retraction of penis into the abdomen and believed that it has been inflicted by some of his enimies to make him sexually invalid. He became extremely restless because of this alleged conspiracy and tied a handkerchief round the penis tip and held it to prevent the disappearance of the organ.

Mental state examination revealed the presence of acute anxiety and irritability, incongrous mood, verbal aggression, fearfulness, loosening of associations in thought process, thought insertion, persecutory delusions (some unidentified conspirator malevolently having done some spell on him so that his masculine strength would go and the penis would "vanish"). Strong ideas of reference were present. He experienced hearing voices - a male voice, condemning him in slang language or making commentary of his every action and behavior. These voices were coming in a spell and during these spells of episodic voices, his excitement and aggression increased. His judgement and insight were completely impaired.

Physical examination showed no abnormality except the long standing bilateral scrotal hydrocele. Premorbid personality was suggestive of schizoid type. He had a late marriage at the age of 39 and had no issue.

On further clinical interview he disclosed that he had overheard the news of 'penis-retraction' in the region from a public discussion in a road-side tea shop few days ago. He was quite apprehensive and expressed his concern about the enimity from his fellow workmates at the factory shed, though the reason of such enimity was not clear to him. Two years back some such unidertified workmates tried to do harm by offering him a betal

leaf that contained some "charmed" tobacco ingredients. He overcame this malady by wearing a counter charmed metal amulet collected from a local folk healer.

He experienced sudden pain in the scrotum a day before his Koro attack. On the day of his attack, he felt a peculiar boring pain in the lower abdomen and in the evening the pain increased and then he noticed the small penis shrinking into the abdomen while the size of the scrotum had increased. This caused him great anxiety and excitement and he realized that it is an attempt by his enimies to make him impotent. He tried his penis with a handkerchief by himself and held the other end firmly under his grip.

Intramuscular injection of haloperidol 10 mg and phenergan 100 mg immediately at the emergency room caused considerable decrease in his irritability and excitement. He was then put on haloperidol injection (1M) 30 mg a day in divided doses along with injection (1M) diazepam 10 mg at bed time for four days. On fifth day he showed marked improvement regarding his excited psychomotor behavior and injectable haloperidol was changed to tablets with some dosage readjustment. On tenth day, the frequency of his hallucinatory voices was greatly minimised, the firmness of his delusional conviction became more weak and he failed to remember the incident of his penile retraction in detail. He only said that his urine was struck so he tied the penis with handkerchief. In the followup visit at the end of a month he talked quite normally, showed good rapport and delusion was cleared to a large extent and he resumed his job uneventfully.

Discussion

Sexual identity in schizophrenia is a topic of much clinical interest. Macalpine and Hunter (1955) considered 'ideas of sex change' and 'doubt about sexual identity' as pathognomonic features of schizophrenia. Plauansky and Johnston (1962) showed in their series that 15% schizophrenics exhibited "direct expression of confusion of sex identity" and about 5% had delusions having changed

into a woman. Though several authors stated that genital hallucinosis is a frequent symptom in Schizophrenia (Anderson, 1964; Fish, 1962; Noyes & Kolb, 1963; Mayer Gross et al, 1962; Skottowe, 1964), no precise study however is found regarding the frequency of ideas of a morphological change of genital organs. Klaf and Davis (1960) noted that 26.7% of schizophrenics had delusions or hallucinations of a sexual nature. Gittleson and Levine (1966) showed in a conntrolled study that 30% of schizophrenics had genital hallucinosis and 27% had delusions of sex change. They stated that unmarried schizophrenics had more delusions.

Lukianowicz (1967) reported a patient of acute schizophrenia who had a sensory experiences in his body image (change of sex). The feelings were the increase in size of body parts, viz. breast and buttocks ("plump") like females.

Genital Dissolution as Delusion

The perception of penile retraction and disappearance (into the abdomen) as a delusion in cases of schizophrenia deserves special mention because of this typical symptom choice. Firstly the cases whether involving patients suffering from schizophrenic illness or those having history of it, develop the Koro symptom in the background of an ongoing Koro epidemic. The concurrent social panic of Koro epidemicity in these situations makes the schizophrenics more vulnerable as regards their sexual delusional cognition owing to their psychotically weak ego-boundary or dissoluted self (Chowdhury, 1990a). The sexual content gets well incorporated into the fabric of their bodily delusion with or without the attribution of a persecutory colour. This situation is well comparable with the current socio-political content of grandiose delusions of manic psychosis. So, here, the impact of the epidemic nature of the illness help in gaining entry of the specific symptom (penile shrinkage) into the already existing psychopathological network. The symptom as such, moreover, involves a dimension of loss of masculine identity and sexual power and vitality, which, by virtue of its sensitive locus in the identity axis, gets easily attached to the delusional system of the schizophrenics.

Secondly, in sporadic cases no such epidemic background is present and the penile shrinkage experience may there be viewed as the expression of core psychopathological process which Lukianowiz (1967) described as sexual meta-morphosis. Here, the disturbances are in the body image of the patient where the penile shrinkage 'feeling' is usually ideational in nature and is not normally associated with the characteristic acute panic of impending death. The penile symptom here is one of many symptoms of body image disturbances, eg. body image disturbancs affecting shape and size, splitting of body parts, perception of additional body parts, increase or decrease of body mass or it may be a part of discrete body image defect like Capgras syndrome (Smyth & Deam, 1992).

A schizophrenic illness may make its first appearance via a genital shrinkage symptom and in that case the most important point in differential diagnosis with primary classical Koro is the absence of the reality testing power with other psychotic features in the patient. Sexual anxiety may be present in both, but in schizophrenia it lacks the neurotic elaboration and in the classical Koro, it has in addition a strong cultural belief with full insight. So genital shrinkage under the nosology of Koro needs careful analysis regarding its newer descriptive terminology, viz. Koro symptom, specially when it is secondary to certain other primary psychopathology.

Analysis of all these cases also revealed some interesting findings about some other psychiatic symptom associations. Hypochondriacal concern (of genital organs) or heightened genital awareness to the extent of obscessive quality is a point of important consideration. Most of the cases also had deep sense of masculine inferiority prior to their Koro attack. Defective sexual adjustment history and strong adherance to cultural construct of 'semen value' are also well evident in almost all the cases. Therefore, it is not a oversimplification to say that most of the cases had a defective psychosexual cognitive background upon which their schizophrenic illness developed with the Koro expression. So what

appears most pertinent from these accounts is that the cognitive basis of sxuality, in both its psychological and physiological form, may have a definite contribution to the patient's vulnerability towards genital symptom choice (Chowdhury, 1989a,b; 1991b,c), which eventually takes the cultural tinge of masculine value and strength construct, even though it (penis shrinkage symptom) is expressed in the midst of a psychotic process, viz. schizophrenia.

KORO IN AFFECTIVE DISORDER WITH SEVEN CASE REPORTS

SUMMARY

There are reports of Koro in association with other psychiatric diagnosis and in drug abuse. The occurrence of Koro in combination with affective disorder (depressive state) is also not very uncommon. The present paper deals with such association between Koro and depression in the world Koro literature, along with reports of seven (three male and four female) such cases from the North Bengal Koro epidemic of West Bengal. The relevant clinical features of each of the cases is presented.

The correlation between depression and somatization is a long established clinical association in psychiatry. Kirmayer (1984b) in his elegant analysis of inter-relations among culture, affect and somatization cited a handful of research findings where an association between depressed affect and somatization has been established. It has been postulated that there exists a heightened body-awareness in dysphoric mood states (Fisher, 1980; Malmo, 1975). Depersonalization, a disorder of self-awareness, is often linked with body-image disturbances. It has been claimed that somatic depersonalization is a form of disturbed body-image and has a close clinical relation with hypochondriacal delusions (Mayer-Gross, 1935; Bychowsky, 1943). Schneider (1958) postulated that the loss of vital or bodily feelings is characteristic of melancholia. These feelings may be generalized or localized. This localized loss of vital feelings bears a strong resemblance to the construct of depersonalization (Mellor, 1988).

Bychowsky (1943) postulated in this context a theory of reactivation of the narcissistic cathexis of the body image by the dysphoric emotional state. He also pointed out how a trivial, often insignificant, (bodily) defect may generate a state of inferiority complex and is

expressed in a neurotic disturbance of body image. Similarly, the biological/physiological changes may act as a potential cause of somato-psychic disturbances leading to perceptual deviation and experience of altered elements of the body image, as often seen in manic-depressive or involutional melancholia cases (Bychowsky, 1943). Bychowsky (1943) stressed the importance of depersonalization of particular body parts as a consequence of altered cathexis of elements of body image in depression, including depersonalization of genital organs. Hes and Nassi (1977) stressed the role of a dual defence mechanism, viz. obsessive-compulsive reaction and body image disturbances (penile retraction) in warding off the castration anxiety and fear in Koro cases.

Lukianowicz (1967) in his elegant study of body image disturbance found that in depressed subjects 50% experienced changes in the body shape : 8.5% in the size, 8.5% in the position and 33% in the mass of the body parts. Fisher (1980) found an association between attention to distinct body areas and specific emotional state.

Koro, a psychogenic disorder with an overwhelming preoccupation that the penis will retract into the abdomen in the male;and that the breast or the labia will retract into the chest or the abdomen respectively in the female, hence causing death, is often noted in the context of depressive illness. Koro is intimately linked with a sudden alteration in body (organ) image perception (Kinmayer, 1992). Yap (1965a) described Koro as a "unique example of depersonalization syndrome" with a mark of influence of personality, social and cultural factors.

The present study is devoted to explore the association between Koro and affective disorder, viz., depressive state, in the world Koro literature along with the reporting of such an association from the cases of North Bengal Koro epidemic (Chowdhury et al., 1988). Thus an analysis of 20 Koro cases (all males) from world literature and seven cases (three males; four females) from North Bengal Koro epidemic has been done. One of the male cases was from an industrial set up of Siliguri.

ANALYSIS OF WORLD KORO LITERATURE

Table 1 depicts the findings of 20 case reports from 1921 to 1992 where an association between penile retraction/shrinkage or Koro and depressive illness has been found. Except those reported by Sachdev (1985), all are sporadic cases.

Table 1. Penile retraction and depression

Sl. No.	Author (Year) Ethnicity of the case	Number of cases	Diagnosis
*1.	Kraepelin (1921) German	1	Depression(MDP)
*2.	Bychowski (1943) Hebrew	1	Depression
3.	Yap (1965a) Chinese	2	H/o MDP Depression(Neurotic)
4.	Yap (1965b) English	1	Recurrent Depression
5.	Lapierre (1972) French Canadian	1	Depression (Organic)
6.	Arbitman (1975) English	1	Depression (Neurotic)
7.	Hes & Nassi (1977) Georgian Jewish	1	Agitated Depression
8.	Ang & Weller (1984) Greek Cypriot	1	Depression (MDP)
9.	Sachdev (1985) Indian	2	Major Depression, recurrent
10.	Modai et al.(1986) Jewish	1	Depression
11.	Oyebode et al.(1986) English	1	Endogenous Depression
12.	Durst & Rosca-Rebaudengo (1988) Jewish	1	Recurrent Depression (Organic)
13.	Anderson (1990) English	1	Depression,recurrent
14.	Turnier & Chouinard (1990) ? Canadian	1	Major Depression
15.	Adityanjee & Subramanian (1991)	1	Depression
16.	Chen (1991) Malaysian Chinese English	1	Psychotic Depression
17.	Kennedy & Flick (1991) American	1	Depression
18.	Heyman & Fahy (1992) ?	1	Depression

* Cases originally reported not as Koro.

The earliest clinical reference of perception of penile shrinkage/ retraction or Koro-like symptom in the background of affective disorder was probably reported by Kraepelin (1921) in the eighth edition of his treatise on manic-depressive illness. He described the fear of penile shrinkage as one of the hypochondriacal delusions in the depressive state.

Bychowski's (1943) elegant paper "Disorders in the body image in the clinical picture of psychosis" described the case of a 46 year old Hebrew male who had multiple attacks of depression triggered by a number of bereavements (death of father, wife) and who developed sexual conflicts centring around a new hetero-sexual relationship. He stated, "The most striking phenomenon associated with this depression was the peculiar feeling that his sexual organs were somehow foreign to his body and that at times he could not even feel that they were there. This impression was so strong that the patient would frequently grab himself by his sex organs in order to be certain that they were still there. With time this feeling spread also to other organs, although in a minor degree; classic symptoms of a depressive meelancholia began developing at the same time.In spite of extensive psychotherapeutic effort the patient committed suicide. This sequel is good evidence of the fact that this condition in spite of its psychogenic basis passed into an endogenous-like depression. Very striking is the symbolic significance of depersonalization in this case as a realization of the unconscious wish for castration" (p.321). It is important to note at this point that Western researchers viewed the perception of genital shrinkage from a psychoanalytic perspective as acute castration fear (Kobler, 1948). In a recent analysis about the universality of castration fear, Kirmayer (1992) puts this postulation as, "the loss or diminution of phallic power then is both a biological and a symbolic attack on masculine identity. The castrated man has lost his power of creation, connection and transcendence" (p.142).

Yap (1965a) in his account of 19 Chinese Koro cases found two having a connection with affective disorder. One had attacks of a bipolar affective disorder (depression-mania) and the other had predominant depression at the time of Koro attack. The nature of

depression was probably neurotic as the subject had history of "environmental pressure" and of "an inadequate, anxious personality".

The third case reported by Yap (1965b) was a 43 year old Englishman who had history of three circumscribed attacks of depression with somatic symptoms. This patient also had a longstanding organ (genital) conflict because of a history of trauma to the testicles which was forced into the inguinal canal in a fall and was reduced afterwards. He was always ashamed of his small penis and "unduly long testes". He had a complaint of impotency prior to his Koro attack.

Lapierre (1972) described a 55 year old French-Canadian who suffered a Koro attack three days after a lobectomy operation for bronchial carcinoma. He had severe depression for which antipsychotic medication was given and showed good result. Psychiatric history showed that he had a solitary attack of depression with auditory hallucination in the past. For a few months prior to lobectomy he was suffering from impotency and after a few weeks of his Koro attack he was diagnosed as having a cerebral tumour in the left-fronto-temporal region. The patient died some months after.

Arbitman (1975) reported the case of a 44 year old Englishman who developed a Koro attack in association with depression having a marked obsessive-compulsive trait at the background of a habit of heavy alcohol drinking. Psychological tests showed a poor male sexual identification as evinced from human figure drawing where he failed to draw genitals. His habit of heavy drinking was related to his attempt of self-administered medication aimed at alleviating depression. He responded to meprobamate along with psychotherapy.

Hes and Nassi (1977) reported a case of Koro in a 44 year old Georgian Jewish immigrant to Israel. His contomitant diagnosis was agitated depression.

Ang and Weller (1984) described a 20 year old Greek Cypriot immigrant to London who had a Koro attack with depression. Subsequent followups proved this case to have a bipolar affective disorder with an attack pattern of depression - hypomania-hypomania-depression. He showed good response to amitriptylline. His father had a history of recurrent depression and was treated with ECTs.

Sachdev (1985) in his analysis of 31 cases of Koro epidemic of Assam (India) found two cases with an additional diagnosis of major depressive disorder, recurrent type (in remission).

Modai et al., (1986) found a 56 year old Jewish man who had complaints of shrinking penis with an underlying depressive state.

Oyebode et al., (1986) described the very interesting case of a 56 year old man. He had a history of recurrent Koro attacks since six years. At the time of clinical contact he was also suffering from endogenous depression of more than one year duration, which responded favourably to dothiepin. Premorbid personality was of obsessive character. His mother commited suicide when he was 21 and his father died 18 months later. He was married for 26 years and had no issue.

Durst and Rosca-Rebaudengo (1988) reported an interesting case in the background of organic pathology. The patient, a 29 year old Jewish Ashkenazic man, presented with the perception of penile shrinkage with fear of death, associated with severe depression and intense suicidal intentions. His CT scan revealed a tumour in the genu of the corpus callosum, which exerted a mild pressure on the surrounding structures. The mass was suspected to be either a lipoma or a dermoid tumour. The suicidal intentions were so threatful that ECT was given in spite of the contraindication of the space-occupying brain lesion. Four ECTs resulted in good recovery along with the passing of perception of penile shrinkage and fear of death.

Anderson (1990) reported the case of a 73 year Briton who had Koro attack in the background of cerebral stroke (left hemiparesis, facial weakness, sensory inattention and neglect) and depressive illness. He also had a history of three hospitilization for depressive disorder during the last 15 years and each of the attacks, responded favourably to treatment with tricyclic antidepressants. He lived with his second wife whom he married at the age of 51. For 15 years prior to his Koro attack he had no sexual relation with his wife because of her disability, as she wore a caliper on a paralysed leg due to childhood polio.

Turnier and Chouinard (1990) reported a case of Koro in association with major depression. He showed good response to treatment with trimipramine and bromazepam. The authors concluded that the

tricyclic antidepressants, by treating the depression, had a curative effect on the Koro symptoms.

Adityanjee and Subramanian (1991) described a case of Koro in a Malaysian Chinese in the setting of a marital discord. This case may be aptly called a case of chronic Koro as he had recurrent penile sucking (into his body) perception with acute fear of impending death and insanity, once or twice a week, lasting for about 30 minutes, several times in a span of one year. He had a difficult life situation with marital maladjustment and his Koro attcak was well coincidental with his increasing stress and anxiety. He showed good response to anxiolytic medications and relaxation therapy. At his third follow-up he was found depressed with suicidal ideation and "transient recurrence of his earlier feelings" (penile sucking) for which he was admitted. This episode was also related with his poor marital relationship because a day before his admission his wife eloped with one of his friends. Antidepressants and psychotherapy gave a good response.

Chen (1991) reported an elderly (69 year) English Koro patient in the background of L-dopa therapy for his idiopathic Parkinsonism along with psychotic depression, of two month's duration. Withdrawal of anti-parkinsonian drug and treatment with small doses of neuroleptics relieved his symptoms.

Kennedy and Flick (1991) reported a 21 year old American male who experienced a Koro attack in the background of a dual psychiatric disorders, viz., panic disorder with agrophobia and depression. His panic attack had a history of six months and the depression of one month prior to his Koro attack. The first panic attack was six year earlier. He also had multiple bodily complaints and was having the diagnosis of mitral valve prolapse with "lazy eye" syndrome. He was treated with imipramine and by day 12 of treatment he developed hesitancy and strain on urination and eventually the feeling of genital retraction. He also had a similar fear of genital retraction 6 year earlier while using a vibrator for masturbation.

Heyman and Fahy (1992) described a case of Koro-like symptom in a 32 year old man in association with a depressive illness and infection with human immunodeficiency virus (HIV). He was seropositive for HIV for four years. At the time of admission he gave a two months

history of depressive illness with suicidal ideas. For five years preceding this admission he had experienced several self-limiting episodes of depression. His score on the Beck Depression Inventory on admission was 34 (severely depressed). He had multiple bodily hypochondriacal concern, often to a dysmorphophobic extent, of a dermatological abnormality (excessive oiliness of skin and probability of acne eruption). The Koro perception in this case was not acute, but gradual and ranged over a period of three months. There was no fear of imminent death but he was clearly anxious and depressed owing to this slow shrinking process and felt that eventually his penis might disappear completely. He showed good response to dothiepin (150 mg/day) along with counselling and cognitive therapy during his two month's hospital stay. His BDI score on discharge was 14.

ANALYSIS OF NORTH BENGAL KORO EPIDEMIC CASES

A total of 395 Koro cases, 347 male and 48 female, were reported from the North Bengal Koro epidemic (Chowdhury et al., 1988). Seven cases, 3 male and 4 female, were found with a concomitant diagnosis of depression.

Koro with Depression in Males

Three cases, one with a concurrent diagnosis of depression (in an industrial set up) and two with history of bipolar affective disorder was found. A brief account of these cases follows.

CASE REPORTS

Case 1

Mr. R.K., a 24 year old single Rajbanshi male, casual labourer of a milk processing industry (Himul) at Matigarah, Darjeeling, developed the complaints of penile retraction with fear of impending death while urinating at a road side one evening.

He was having a history of depressive illness for one month prior to his Koro attack. He was suffering from sad mood, feeling of gloom, lack of interest in work or social mixing, early insomnia and loss of appetite. There was a fluctuation of mood with diurnal variation. He was also losing body weight and noticed a marked deterioration of his physical health, specially the diminution of facial muscle

mass and thinning of the root of penis which became like a "slender rope". He gathered from one of his workmates that this penile change is a potential sign of sexual ill health and may lead to impotency. He therefore consulted a general practitioner and took three injections of anabolic steroid (Orabolin) at weekly intervals but without much benefit. This observation made him extremely anxious over and above his great worry regarding his job stability as there was some discussion in the plant that the authority would lay off some casual workers shortly.

He was aware and quite fearful of the ongoing Koro epidemic in the locality. On this evening when he tried to urinate, he suddenly felt that the penis became too tiny and small and difficult to locate. This sudden sense of "no penis" evoked a terrible fear with perspiration and choked throat sensation and with much difficulty he tightly caught hold of the penis tip and attempted to void urine by abdominal pressure. No urine came out and he realized that the penis was being strongly pulled from within the abdomen because as he freed it, it went inside again like a "spring". At this point he became extremely fearful, the traffic and other events taking place on the busy road seemed unreal and puzzling. He was feeling faint and thought he would die from this struck off penis on the road. He then uttered a monosyllabic cry and some people from a closeby road-side tea shop rushed to help him. They poured quite a few buckets of water over his head and gave him a drink of green coconut water. After about twenty minutes he returned to his senses and found the penis easily palpable without any "spring action".

Mental state examination on the next day revealed the presence of depressive mood along with other signs of depression. He was also rather apprehensive of his Koro attack because he was going to marry within a month or two. Psychosexual history disclosed that he started masturbation at the age of 14, had an operative correction of phymosis at 16 and had an unsuccesssful intercourse at 17.

He was treated with doxipin hydrochloride (75 mg BID) and diazepam (5 mg) at bed time with supportive psychotherapy. He urged for some vitamin injection to regain his strength rapidly. For treatment compliance he was given three injections of vitamins B_1, B_6 and B_{12}

every alternate day. He showed remarkable recovery at the end of six weeks and came to a follow up visit with cheerful mood and with a invitation card for his marriage.

Case 2

Mr. AB., a 36 year old Hindu married accountant of a government office came with the complaint of penile indrawing with fear of "complete impotency" one afternoon to the private clinic of a psychiatrist. He was suffering from bipolar affective disorder (with five manic and six depressive episodes) since last six years. He was stabilized on lithium carbonate (800 mg daily). He was also having complaints of sexual weakness and poor marital adjustment prior to his Koro attack.

He expressed his unhappiness with marriage as he was quite aware of his disability arising out of his periodic mental derangement. He was aware of Koro and strongly believed that he became a victim because of his existing sexual weakness. He recovered well with the addition of lorazepam (2 mg BID) and psychotherapy to his existing lithium maintenance therapy. The patient commited suicide by hanging in another depressive spell in 1990.

Case 3

Mr. BC., a 22 year old married Rajbanshi male cultivator developed Koro while catching fish with a net in a pond on one morning. He had a history of grand-mal epilepsy since his childhood with an attack frequency of at least once a couple of months, and continued irregular treatment with phenobarbitone. Three months prior to his Koro attack he had an episode of severe depression with persecutory delusion. He had severe suicidal thought, attempted suicide by hanging and was admitted to North Bengal Medical College Hospital. He showed eventual recovery with antidepressant medication (amitriptylline 25 mg TID).

Koro with Depression in Females

Four cases, three with concurrent diagnosis of depression (two neurotic and one psychotic depression) and one with history of recurrent depressive disorder were found. A brief account of these cases follows.

Case 1

Mrs. A., a 28 year old lady, married for four years, having a history of primary infertility, developed Koro breast symptoms in a marriage ceremony. Her husband (32 years) was also affected with Koro along with fifteen other males and five females during this same evening. She had a history of frequent hysterical fainting attacks. For six months prior to her Koro attack, she was suffering from a host of distressing symptoms like extremely sad mood, feeling of despondancy and of deep guilt for her sterility, lack of interest in familial and social mixing, markedly diminished libido, weakness and tremor of hands, anorexia, poor sleep and constipation. Within two months she responded favourably to treatment with doxipin hydrochloride (50 mg BID) and nitrazepam (5 mg at bed time).

Case 2

Mrs. B., a 34 year old married lady with a history of six years' primary infertility, developed Koro breast symptom at the background of marked anxiety, neurotic preoccupation with multiple somatic disabling symptoms (e.g. headache, body ache, tremor, shivering, abdominal distension etc.), feeling of sadness and hopelessness with feelings of guilt and humiliation for infertility and disturbed sleep, of more than six months duration. She was also having an adjustment problem with her husband and inlaws. She felt ashmed of her Koro breast symptoms later and linked it with a period of fasting and consequent physical illness, into which she deliberately indulged after a quarrel with her inlaws.

Case 3

Mrs. C., a 31 year old married lady, with a history of tubectomy one year ago, presented with Koro genital symptoms. Two months prior to her Koro attack she was having extremely sad mood, psychomotor retardation, suicidal thoughts, poor appetite, sleep and libido with a strong suspicion about her female neighbours whom she believed to be enimical to and jealous of her because of her "ideally masculine" husband.

She also had diurnal variation of mood with distressing early morning awakenings. She had three children, two daughters and a

son. She was unhappy since her tubal ligation because she had developed multiple physical problems (back and abdominal pain, irregularities of periods, pain inside the vagina, loss of physical strength etc.) along with a sense of "loosing femininity" and feeling of shame and ridicule when he mixed with the womenfolk of her community. She linked her Koro genital symptoms (e.g. retraction of labia and vaginal pain) with some definite "aftermath" of laporotomy operation, which, according to her, made some "derangement of organ" inside the abdomen. She was aware of the ongoing Koro epidemic in the community. Cold water bath and wearing of a charmed copper amulet given by a local priest healer helped her get rid of Koro symptoms. She was prescribed imipramine (50 mg. BID) and nitrazepam (10 mg. at bed time) with a good initial result at the end of four weeks .

Case 4

Mrs. D., a 34 year old married lady who had tubal ligation two years ago, developed Koro breast symptom while working in an agricultural field. She had a history of recurrent (at least four) well circumscribed attacks of depression within the last three years. Each episode was characterized by sad mood, extreme motor retardation, severe anorexia, bitemporal throbbing headache, poor sleep and constipation, which lasted for about two to three weeks and always started premenstrually. During this phase she refused her usual food and drinks, became very silent and quiet and used to lie down for hours together. Each episode was treated by a general practitioner who gave amitriptylline (25 mg BID) along with sedative and other drugs.

KORO AMONG KINSHIP

SUMMARY

The world medical literature has recorded at least seven large Koro epidemics during this century (Jilek & Jilek All, 1977; Jilek, 1986; Sirois, 1974), but none reports Koro affliction within members of the same family. The present study is devoted to the identification of Koro cases among the first degree relatives collected by field survey of the North Bengal Koro epidemic. A total of twentyone cases from nine families within five types of Kinship were collected (one case being reported from Burdwan district) and the pattern of Kinship, along with the available psychosocial details is described.

CASE REPORTS

Brother-Brother Kinship

Four families were found where two or more brothers were either simultaneously or concurrently affected by Koro.

In the Kharibari village of Darjeeling district in a family two brothers (Fig.1) of the three were affected. The eldest (18 years of age) had Koro in the morning while going to market and the next one (14 years) was affected in the same evening.

In the Mahischaru village of Cooch-Bihar district two brothers had simultaneous Koro attack while working in the agricultural field. The elder brother (22 years) shouted in fear upon hearing a mystical (?) hallucinatory voice "Kot-Kot" just before his Koro attack. The younger one (16 years), working at a distance, heard the 'cry of distress' and instantly experienced the Koro symptom.

Fig.1

Fig.2

In a family of the village of Kathalmuri of Jalpaiguri district two among the three brothers were affected by Koro. The eldest one (20 years) had the attack while taking bath in a river, while the youngest one (18 years) had Koro after four days while on his way to a market (Fig.2).

Five Koro cases (brothers from the same family) were reported to the Katowa subdivisional hospital in Burdwan district. The first case was the eldest brother (34 years) who was taken to the hospital emergency in a state of profound hypothermic shock from which he could't be revived. He was forcefully immersed in a pond up to his neck for almost eight hours after his Koro attack. Next day after hearing the news of his death the four remaining brothers had the Koro attack almost simultaneously.

Brother-Sister Kinship

This family was from the village of Ambari, Jalpaiguri district. The sister (27 years) was the elder than other two brothers. She was separated from her husband since six years on account of his impotency. She had Koro attack (flattening of breasts on the chest wall) one early morning. The youngest brother (19 years), who had had a history of manic attack two years earlier, developed Koro sysmptom two days letter, at about the same time of the day.

Father-Son Kinship

In the village of Salugaraha, Darjeeling district, a forty-two years old man was affected in his house during one morning. His only son, 18 years old, had Koro while working in the agricultural field at about 3 p.m. of the same day (Fig.3). The son had history of grand-mal epilepsy with irregular antiepileptic medication. Once six months back he had attempted suicide by hanging.

Father-Daughter Kinship

This family Koro was from the village of Falakata, Jalpaiguri district. First, the father (44 yeears), a milkman, was affected

Fig.3

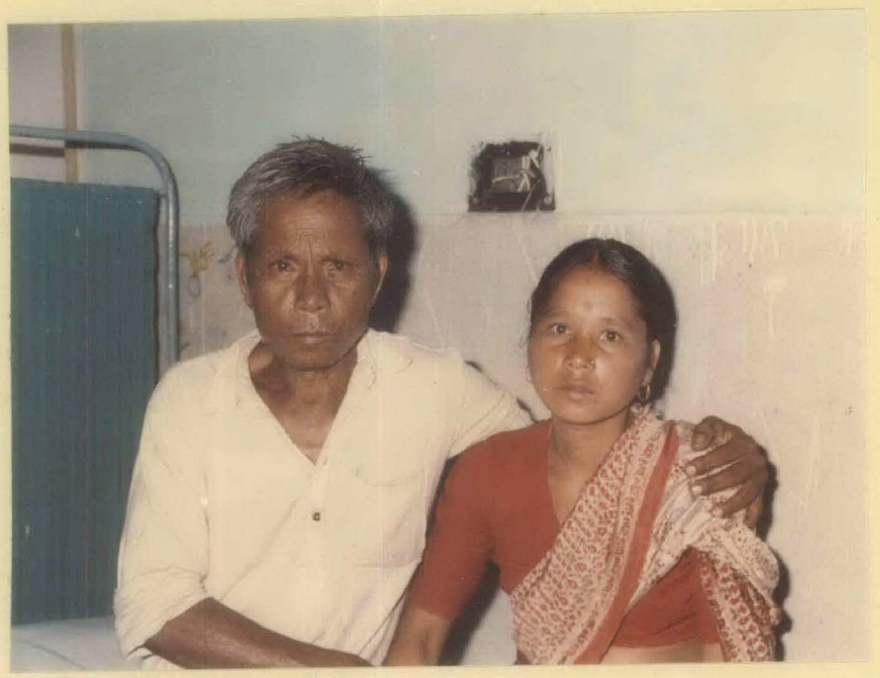


Fig.4

in the early hours of the day while milking his cow. His only daughter (26 years), had the Koro attack (breast symptom only) towards the evening of the same day. While the father had no residual symptom, the daughter complained of fear and weakness for which she visited the North Bengal Medical College hospital (Fig.4). The Mother of the girl had accidentally died by drowning ten years previously.

Husband-Wife Kinship

The first couple (Fig.5) was reported from the village of Jateswar, Jalpaiguri district. The husband (32 years) was suffering from long-standing "sexual weakness" and "weak dhat" and the couple had no issue despite four years of marriage. The wife (28 years) had history of frequent hysterical fainting attacks. Both had simultaneous Koro attack (wife had breast involvement) at about 6 p.m. at a marriage ceremony, where another sixteen males and five females were affected by Koro, almost in a chain reaction.

The other couple was from the town of Siliguri, Darjeeling district. The husband (26 years), had history of incest and alcoholism. He had Koro at about 11 a.m. in a market. The wife (20 year) experienced the attack (breast symptom) after a quarrel with him in the same evening in a neighbour's house (Fig.6).

Discussion

In psychiatric epidemics, once a person with symptoms is defined as sick, a series of negotiations begin between him and other interested parties, such as family, community or treatment personnel. Social communication and negotiation about the expectation of the illness accelerate the spread of the symptom in question, through various sociometric channels, viz. group influence (Kerchoff et al., 1965) or social comparison (Mechanic, 1975). The members within the same kinship orbit may, due to their covert vulnerability, follow the mechanism of sequential identification and modelling (Taylor & Hunter, 1956). There, instead of providing

Fig.5

Fig.6

care to the sick person, they adopt the sick-role themselves, probably because they share the common conflicts related to personal and sexual identity. It is interesting to note in this context that in each kinship the elder member had the Koro attack first. Koro affection within these close relationships may also be indicative of intra-familial psychopathology, which was probably operative in the background of Koro vulnerability of their members.