SECTION ELEVEN

KORO DEFINITION & CLASSIFICATION

DEFINITION AND CLASSIFICATION OF KORO

ABSTRACT

Attempts at defining and classifying Koro have been undertaken by various researchers over at least the last fifty years without any consensus emerging till date. The occurrence of Koro, not only in different parts of the world but also in association with varied morbidities, has of late diluted its primary identity as a culture-bound syndrome. Further, the DSM-IIIR and ICD-10 provisions to include culture-bound syndromes like Koro are open to various diagnostic options. There is a recent move to have it included in DSM-IV. One of the fundamental problems inherent in these attempts is the semantic confusion Koro generates in its basic phenomenological analysis. The present paper deals with some of these issues as evinced from a historical analysis of world Koro literature, and with comments on the future research agendum.

The diagnostic nosology of Koro is a long-standing debate in psychiatry (Chowdhury, 1990a). The principal cause of this is its culture-relatedness, which has a long and fascinating history. During the span of last hundred years, i.e. from the first known medical reference of Koro in 1865 (in Guangdong, China) to the large-scale Koro epidemic in Singapore in 1967, all the published reports concern the ethnic Chinese. Although there are two classical Koro case reports published in mid-1880's in the western medical press (Ivanov, 1885 in Russia and Raven, 1886 in England), these failed to attract professional attention and Koro thus was regarded as a manifestation solely among

the Chinese. The first few elaborate clinical reports of penile retraction by the name of Koro were also reported by Dutch physicians (Blonk, 1895; Brero, 1896a,b; Vorstman, 1897) from the then Dutch East Indies (Indonesia), thereby strengthening even more its oriental indigenousness. Not only Koro but other mental disorders like Amok, Latah and organic diseases like Kuru (a slow virus CNS infection) - all were seen as 'exotic' diseases of the south-east Asia. Koro appeared as a culturally related disease, more so because of multiple references of the genital retraction malady in the traditional Chinese Taoist yin-yang medical philosophy. This yin-yang dualism in Koro dynamics is re-discussed in the present century by Gwee (1963, 1968) and Rin (1963; 1965).

Till the late 1970s, Koro expression was virtually undetected in western patients. So the *emic* (locally defined) and the *etic* (outside-analyst defined) controversy in the Koro nosology became a major topic in the transcultural psychiatry. The pioneering works of various scholars in the field of transcultural psychiatry like Eric Wittkower; E. Stangel; Alexander Leighton; L.L. Langness; Ari Kiev; Silvano Arieti and H.B.M. Murphy during the 1960's and 70's brought this debate more to the forefront. The culturally related diseases took many names like 'psychogenic psychosis' (Faergeman, 1963); 'ethnic psychosis/ neurosis' (Devereux, 1956); 'hysterical psychosis' (Langness, 1967) and 'exotic psychosis' (Yap, 1969). These diverse nomenclatures created more problems by furthering the semantic confusion, instead of settling the nosology of these psychopathologies in the 1960's and 70's.

Since 1951 Yap had been trying to offer a coherent classificatory scheme for Koro and other 'exotic' entities of south-east Asia and, after a relentless academic pursuit, in 1974, he designated Koro as an 'atypical culture-bound reactive syndrome'. He also provided a "tentative" classification of 'atypical culture-bound syndromes' where he placed Koro under the heading of "emotional syndrome, with depersonalization state" while for

the ease of western conceptualization he also placed Koro within the heading of "culturally imposed nosophobia (Depersonalization states associated with severe anxiety, arising from unrealistic fears)" under the broad heading of 'reactive psychosis'. This was clearly an attempt to balance between German and Scandinavian scientific taxonomies of reactive psychogenic psychosis to exotic terms (Jilek, 1982). The culture-centred diagnostic dualism of Koro remained an unresolved issue until the late 60's as evinced from the varieties of diagnostic labelling of Koro by pioneering researchers of this decade (Table 1).

The study of 'oriental' Koro nosology took a significant turn in the 1970's because of the publication of a report called "Koro-pattern of depersonalization" involving an American patient by Edwards in 1970, and the Koro epidemic among the non-Chinese population of Thailand in 1976. In the 1980's a series of reports of sporadic Koro cases from different Western countries (Britain, France, U.S.A., Canada) and from Africa (Nigeria, Tanzania) shifted the focus of Koro nosology from being a regional issue to a universal formulation. Three important events took place at this stage : (1) most of the Western reports showing Koro in association with varied secondary morbidities, ranging from organic mental states to drug abuse and other psychiatric disorders; (2) a large-scale Koro epidemic reported in India, a culture with very little link with that of China and (3) a publication by Beoris and Morley (1984) on Koro in non-Chinese subjects in the Western world. In the late 1980's Koro definition and classification again became an important academic issue in psychiatry.

The following is a brief and critical analysis of several attempts at defining and classifying Koro during the last few years.

Edwards (1984) first attempted to break the realm of culture-bound etiology and stressed the role of organicity or physiological contribution in Koro, which he designated as "genital retraction syndrome". He formulated a three-fold classification viz., true physiological retraction; panic of "genital retrac-

Table 1. Diagnostic label of Koro in 1960's

A.L. Gwee (1963)	:	Acute hysterical panic reaction, brought on by auto or hetero-suggestion and conditioning by the cultural background.
P.M. Yap (1965a)	:	Culture-bound depersonalization syndrome.
H. Rin (1965)	:	Castration fear in association with oral deprivation.
P.W. Ngui (1969)	:	Culture-bound psychogenic disorders.

tion in response to real or imagined environmental insult" and culturally patterned somatization. He suggested the use of the term 'genital retraction' for cases in general and proposed to restrict the culture-specific name (i.e. Koro) to the cultural area where such a name is in use.

The next noteworthy attempt at classifying culture-bound syndromes (CBS) was by Ronald C. Simons (1985), who in his elegant book (edited jointly with Charles C.Huges) "The Culture-bound Syndromes : Folk Illnesses of Psychiatric and Anthropological Interest " expounded certain elaborate taxonomic schemes which "denote a grouping based on similarity without specifying the level of abstraction of those similarities", where the "taxon name is used to designate the set collectively. ... The taxon name also serves as a rubric for aberrant instances not connected with culturally elaborate beliefs and practice" (*op. cit* p. 32). The seven proposed taxa (with example) are : startle-matching (latah), sleep paralysis (old hag); genital retraction (Koro); sudden mass assult (amok); running (piblokoqui); fright illness (susto) and cannibal compulsion (windigo). The set of genital retraction taxon is for those cases who have a common feature of "severe anxiety associated with the perception that the genitals are retracting into the body" (Simons and Hughes, 1985, p.151). Simons was hopeful that taxon will be able to include both cases of Koro, i.e., of south-east Asia (with strong cultural specificity) and of western countries (associated with either panic or organic conditions). This however is not a fool-proof system because Hughes tries to compare the possible allocation of Koro symptomatology with that in the DSM-III and discusses the different multiaxial diagnostic probabilities of Koro symptoms, viz. conversion disorder, panic disorder or atypical somatoform disorder etc. (Simons and Hughes, 1985, p.193). Moreover, this classification holds good when genital retraction is the only primary complaint of the patient, but when it is secondary to some other psychiatric diagnosis this taxon would not offer justification of such a diagnostic labelling.

W.G. Jilek, an experienced Koro researcher who worked on culture-bound illnesses in south-east Asia and Africa, provides an extended Koro definition inclusive of its accompanying somatic and psychological manifestations. In his elegant analysis of culture-bound concepts in comparative psychiatry (1982, 1986) Jilek cautions against the eurocentric (ignoring the foreign culture and folk syndromes) and positivistic (if not accommodated with a logical scientific explanation) fallacies in psychiatric diagnoses and adds a new social dimension (unlike the solely cultural doctrine of sexuality) for Koro epidemics. He considers the epidemic expression of Koro as a paradigm of transcultural metamorphosis where collective socio-cultural/geo-political pathogenesis is at work rather than the individual castration anxiety or yin-yang imbalance theory. He is in favour of Koro as a disturbance of body-image perception.

Devan and Ong (1987) attempts to incorporate the recent reportings of Koro in association with other psychiatric and organic illnesses within a simplified classificatory scheme as follows : Classical Koro (with strong cultural overlay); Koro grafted on underlying primary psychiatric disorder(s) and Koro as a symptom of mental illness. Adityanjee and Subramaniam, (1991) stressed the dual aspect of Koro in its diagnostic groupings as sporadic and epidemic forms.

Bernstein and Gaw (1990) recently did an in-depth analysis of Koro symptomatology and proposed a classification in tune with the philosophy of DSM-IIIR. They assert that the cardinal feature of Koro complaint is not anxiety, but genital retraction and the resultant fear of death. Although in this particular context it resembles the category of somatoform disorder of DSM-IIIR, its unique presentation "demands a further specific diagnostic status, viz. genital retraction disorder" with the scope for identification of a culture-specific Koro as well. Table 2 shows their scheme for the inclusion of Koro in DSM-IV.

Table 2. Proposed Koro diagnostic criteria for DSM-IV by Bernstein & Gaw, 1990.

A. A feeling of overwhelming panic associated with the sensation of or the belief in genital retraction.

B. A fear of impending death, should the genitals be allowed to fully retract.

C. A tendency to prevent retraction by holding onto the penis, enlisting help in doing so from friends or relatives, or using devices attached to the penis.

D. A behaviour which is not obviously odd or bizarre, aside from the belief and its ramifications.

E. A lack of meeting, the criteria for any axis I disorder other than somatoform disorder, and where it can not be established that an organic factor initiated and maintained the disturbance.

Specify Type :

Whether in a cultural context or not in a cultural context.

Whether a single case or an epidemic.

DSM, ICD and Koro

Recent advances in the transcultural research in psychiatry and anthropology have broadened the horizon of CBSs as more and more entities are being recognized to the culture specific disorders. Charles C. Hughes has recently provided us a wealth of data of over two-hundred folk illness categories in a glossary of CBSs (Simons and Hughes, 1985). Although the academic circle of psychiatry had hoped that the ICD-10 would be a simple, bias-free, clinically useful, all-inclusive classification having professional utility throughout the world (Wig, 1983), the inherent emic-etic diversity and semantic specificities and conceptual difficulties of the CBSs constitute a great hindrance to this unitary goal of universal classification. The DSM-IIIR, (American Psychiatric Association, 1980), in this context, however, is more receptive as regards the incorporation of cultural data because of its attempt at meta-diagnosis based on dimensional framework rather than typological thinking and prototype approaches (Cantor et al., 1980).

The axis I of DSM-III in at least three categories does show a potential for classifying Koro. These are : (1) Atypical Psychosis - 298.90 ("monosymptomatic delusion of bodily image without accompanying impairment of functioning)", which may be suitable if one considers the convinced perception of genital retraction is a socially-shared cultural belief of a community. (2) Atypical Somatoform Disorders - 300.70 (those "who are preoccupied with some impaired defect in physical appearance that is out of proportion to any actual physical abnormality that may exist"). Some cases of Koro, mainly isolated ones with secondary psychopathologies (e.g. depression, obsession, hypochondriasis or schizophrenia etc.) may well be put into this category. Epidemic cases with similar perception could also be placed here if the inclusion criteria of this category could be widened to mass rather than individual perception. (3) Depersonalization Disorder - 300.60, the criterion A of this category may include cases of Koro but the criterion B is not applicable at all because Koro perception may coexist with other morbidities as well.

In ICD-10 (1992), the category F 48.8 - 'Other specified Neurotic Disorders' includes Koro, Latah and Dhat syndrome, all of which have culture-specific etiologies. There is no scope of further subdivisions e.g. sporadic/epidemic; non-culture specific Koro expression or Koro with other morbidities. Another category, 'Hypochondriacal Disorders' - F 45.2 ("body dysmorphic disorder/dysmorphophobia, non-delusional") may include some Koro cases who have long-standing belief in penile retraction/shrinkage (Chronic Koro) but this does not fit with the symptom presentation of acute Koro attacks or epidemic cases.

The main constraints of the universal classification are its intrinsic ethnocentricity because a majority of the phenomena "occur some place other than the western cosmopolitan society and [the fact that] they are culturally elaborated" (Simons 1985). Prince and Tcheng-Laroche (1987) thus justifiably state that both ICD and DSM are basically classifications aimed towards the Western culture or, more specifically, these are based on psychiatric conceptualization of Western medical science. It is therefore a difficult problem to place the CBS in the niche of these classifications. This basic historical reality inherent in the western-nonwestern dichotomy in the context of growth of science and medicine is aptly reflected in Tsung-yi Lin's (1982) observation :

> "Modern psychiatry was born in the West, and as it grew it was moulded by specifically Western philosophical and scientific traditions, it developed as a child of Western culture. Considering, then, the prevalence of ethnocentrism and the untested presumption of clinical universality in modern psychiatry, it is not difficult to understood why unfamiliar psychiatric phenomena or folkloric healing practices aimed at mental disorders in non-Western cultures are regarded as foreign, primitive, uninteresting or even inferior. Quite simply they are considered as phenomena and practices isolated from the totality of the cultural context which shape them and serve to define their real significance" (p.235).

The DSM-IIIR with its varied perspectives in a multi-axial framework is a new hope in this regard offering, as Good (1987) asserts, "a dramatically altered backdrop for discussions of the culture-bound syndromes". It is also again the same western-nonwestern cognitive differentiations for which, although the DSM-IIIR provides a well-inclusive fold for many CBS like neurasthenia, brain-fag, hwa-byung etc. under the category "atypical somatoform disorder", Prince and Tcheng-Laroche (1987) however feel that "when a large proportion of illnesses require placement in an 'atypical category' the non-Western psychiatrist must feel ill-at-ease with the classification system" (p.8-9).

So, until a more coherent nosological system is available, we should stick to the guidelines as provided by Prince and Tcheng-Laroche (1987) : "The CBS status should be assigned on the basis of inventories of signs and symptoms of diseases that occur in some cultures but not in others insofar as their differential distribution depends upon psychosocial features of those cultures". The hermeneutics of illness (meaning of illness both for individuals and for cultures) will thus be the only possible way to classify CBS for the present time. So in the current state of our knowledge about Koro (and other CBSs) the descriptive classification, as opposed to the aetiological one, will be more practical and will be of wider clinical use for its simple semantic disposition.

In view of the recent reportings of Koro in association with diverse clinical conditions, the present author endeavoured, for professional use, a simple classification of Koro into primary and secondary type. The primary and secondary labels with their appropriate codes may well be put into the axis I of DSM-IIIR or the F 48.8 category of ICD-10 without any confusion (Table 3). All the codes in this classification are open to the incorporation of more categories if needed in the future.

A careful analysis of all the previous postulations regarding Koro definition and classification shows some semantic discrepancies in the understanding of the phenomenological aspect

Table 3. Descriptive classification of Koro.

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1. **Primary Koro** (Culture-bound expression)

   1.0 Sporadic

   1.1 Epidemic

   This involves the expression of the disease in discrete cultural-ethnic groups, either in sporadic or in epidemic form; eg. China, Thailand, Singapore, Indonesia, Malaysia and India.

   A cultural belief or myth plays a major role in the genesis and spread of Koro in the community. Some such example are : contaminated pork in Singapore epidemic (Ngui, 1969); poisoning of food stuff, beverages and tobacco in Thailand epidemic (Jilek and Jilek-Aall, 1977); fox spirit in Hainan Island, China (Prince, 1992; Chowdhury, 1993c) and excessive body heat in the Indian Koro epidemic (Chowdhury, 1991a).

2. **Secondary Koro**

   2.0 <u>With CNS disorders</u>, e.g. fronto-temporal tumour (Lapierre, 1972); tempero-parietal pathology with dysrhythmia (Joseph, 1986); tumour of the corpus collosum (Durst and Rosca-Rebaudengo, 1988); cerebrovascular accident (Anderson, 1990); temporal lobe epilepsy (Jilek, 1986).

   2.1 <u>Drug-induced</u> e.g. heroin withdrawal (Yap, 1965a; Chowdhury and Bagchi, 1993); I.V. buprenorphine withdrawal (Chowdhury and Banerjee, 1994); amphetamine (Yap, 1965b; Dow and Silver, 1973); Cannabis (Chowdhury and Bera, 1994a); antidepressant e.g. impramine (Kennedy and Flick, 1991) or ludiomil (Waldenberg, 1981); L-dopa (Chen, 1991).

2.2 With a primary psychiatric disorder

2.2.0 Schizophrenia (Yap, 1965a; Rin, 1965; Edwards, 1970; Ede, 1976; Cremona, 1981; Ang and Weller, 1984; Devan and Ong, 1987; Chowdhury, 1990a, 1992a).

2.2.1 Affective disorder (Bychowsky, 1943; Yap, 1965a,b; Arbitman, 1975; Hes and Nassi, 1977; Ang and Weller, 1984; Sachdev, 1985; Modai et al, 1986; Oyebode et al, 1986; Anderson, 1990; Turnier and Chouinard, 1990; Adityanjee and Subramaniam, 1991; Chowdhury, 1992f, 1994).

2.2.2 Anxiety disorder (Kobler, 1948; Chakraborty, 1982; Murphy, 1982; Khubalkar and Gupta, 1984; Berrios and Morley, 1984; Hes and Nassi, 1977; Chowdhury, 1990a,b; 1993d).

2.2.3 Personality disorders (Yap, 1965a; Rin, 1965; Cremona, 1981; Malinick et al, 1985).

2.2.4 Other psychiatric disorders e.g. Capgras syndrome (Smyth and Dean, 1992); Hypochondriasis (Kraepelin, 1921; Rosenthal and Rosenthal, 1982).

2.3 With other culture-bound disorders e.g. Amok (Palthe, 1937); Shen-K'uei (Haslam, 1980); Dhat syndrome (Bhatia et al, 1992).

2.4 Others e.g. with HIV/AIDS (Heyman and Fahy, 1992).

of Koro. Thus different researchers have proposed different diagnostic inclusion criteria in the definition of Koro. The issue of culture specificity or non-specificity sometimes makes all these propositions confusing and difficult. The present paper will highlight some of these intricate issues, which will help to clear semantic confusions in future attempts at defining and classifying Koro. The following comments are derived from a survey of world Koro literature along with the present author's research findings and are placed here in the order of proposed Koro description headings of Bernstein and Gaw (1990). This description may also be viewed as a broad and critical analysis of the updated Koro data for the benefit of future research.

CLINICAL PICTURE

The syntax used in Koro definition needs more careful specification. Complaints of genital retraction and genital shrinkage possess some characterological differences. In cases of retraction the question of intra-abdominal pull is obvious, while in shrinkage there may not be any such pull, which, if present, may be of intra-organ (penis) nature. The dimension of penile retraction is heavily linked with cultural beliefs of diverse nature, usually in an epidemic setting (Gwee, 1968; Jilek and Jilek-Aall, 1985; Chowdhury, 1991 a,e, 1992e,g; Prince, 1992; Kirmayer, 1992) whereas shrinkage is predominantly reported in sporadic cases specially in association with organic or psychiatric illnesses or with drug effects (Yap, 1965b; Hes and Nassi,1977; Cremona,1981; Joseph,1986; Chen,1991; Kennedy and Flick,1991). Probably this conceptual obscurity between retraction and shrinkage prompted some authors to label the phenomenon of penile shrinkage or shortening as "Koro-like symptom" instead of Koro only (Shukla and Mishra, 1981; Berrios and Morley, 1984; Lucieer, 1984-85; Heyman and Fahy, 1992). Both shrinkage and retraction of course are complementary to the perceptual deviation in penis image, viz. reduced penis length and volume (Jilek, 1986; Mellor, 1988; Chowdhury, 1989a,b, 1991b,c,d, 1993a), in which case emphasis should be primarily

on perceptual disposition of the penis image of the subject (Smyth and Dean, 1992; Kirmayer, 1992; Chowdhury, 1993b) rather than on the affective response (Thase, Reynolds and Jennings, 1988; Chowdhury, 1990b, 1993d; Chowdhury and Rajbhandari, 1994) concerning the pull-nonpull dichotomy.

In fact most of the reports have shown that Koro patients may experience both types of symptoms as evinced from Ngui's (1969) series where 74.5% complained of genital shrinkage and 60.9% of genital retraction, there being some overlap. Chowdhury (1992b) shows that there may be at least three variations in penile retraction component, viz. only penile retraction (78%); alteration of penis shape with retraction (8.9%) and loss of penile muscular tone with retraction (5.9%). Further, the Koro experience may be without any perception of retraction at all; viz. complete loss of penile sensation (3.9%) and penile shortening without retraction (2.9%). Yap (1965b) notes the symptom of genital paraesthesia (21%) and Gwee (1963) and Joseph (1986) find loss of feeling in the genital region or organ in Koro. Suwanlert and Coates (1978) on the other hand describes the genital symptom complex as a "penile shrinkage phase" consisting of either penile shrinkage, genital numbness or discomfort on urination. Berrios and Morley (1984) also observe such a difference in their analysis of non-Chinese Koro cases where fear of shrinking organ was there in all whereas that of organ shrinking into the abdomen, i.e. retraction due to intra-abdominal pull, was present only in 43.8% cases. So what appears from all these findings is that the syntaxes of retraction and those of shrinkage are not synonymous and retraction of penis is considered to be not the only hallmark of Koro genital complaints or definition (Devon and Ong, 1987; Smyth and Dean, 1992).

A linguistic confusion is also noted in the origin of the term (Koro) to designate the disease itself. Koro, a term used in Indonesia, is a Macassaran word meaning 'to shrink' and the full Macassaran dialect for it is *garring Koro*. In the Buginese language of south Sulawasi *Lasa Koro* is the term for 'shrinking penis'

(Palthe, 1934). In Malay, *Keruk* is the probable linguistic link of Koro which means 'shrink' (Gwee, 1968). The Chinese equivalence of Koro has two sets of orthography - in Mandarin *Suo-yang* and in Cantonese *Suk-yang*. *Suo* or *suk* (or *shook*) denotes 'shrinking, contracting, shortening, reducing, decreasing, retracting and drawing back' (Werner, 1961) and *yang* means penis or male genitals.

The lexicographic analysis of these terms in English also shows a difference. Retraction is derived from Latin which means 'draw back or in, drag, pull or shrink back' whereas 'shrinkage', a term with many similar usage (e.g. in Old English 'scrincan'; in Middle English 'schrinken'; in Swedish 'skrynka', in Norwegian 'skrukka'), means 'reduction, contraction, lessen in size' (Webster's Dictionary, 1989).

Retraction of nipple or shrinkage of breast is again a matter of perceptual difference in cases of female Koro breast symptom. The cardinal breast symptom is nipple retraction, not breast shrinkage or retraction (Ngui, 1969; Rubin, 1982). Ngui (1969) reports nipple retraction in five out of six cases. Tseng et al. (1988) states nipple retraction to be the "usual" complaint in their thirtyseven cases. Chowdhury (1994) finds retraction of nipple (into the breast mass) in 54.4%; retraction of breast (into the chest cavity) in 7.7% and breast shrinkage (breast flattening over the chest wall) in 12.8% of his forty-eight cases. So the point of nipple retraction versus breast shrinkage needs proper differential inclusion in the breast symptomatology of female Koro.

One may invite a serious debate on the issue of retraction-shrinkage criteria, for both penis and breast symptoms in Koro diagnosis. If one very carefully examines the details of references of shook-yang in classical Chinese medical texts and the earlier case reports of Blonk (1895); Brero(1896a,b); Vorstman (1897) and Palthe (1934), it will be amply evident that the cardinal Koro symptom focussed there is the organ retraction within the body. In later years, the semantic construct of shrin-

kage somehow became synonymus with retraction and thus one starts finding Koro reports with both features as unitary presentation. It has been acknowledged that even the epidemic case (with organ retraction) frequencies are contaminated with those of organ dysmorphic (shrinkage) disorders.

The cognition of retraction (inner pull) is intimately related not only with the ethno-cultural beliefs but also with the dramatic expression of acute anxiety and fear of impending catastrophe or death. Organ shrinkage, on the other hand, is mostly seen as a localized organ dysmorphic component of obsession, hypochondriasis, dhat syndrome (Bhatia et al. 1992), impotency, simple anxiety neurosis (Haslam, 1980) or depression (Damodaran and Nizamie, 1993; Chowdhury, 1992f), which usually, unlike the sudden retraction in Koro, has a chronic course with chronic anxiety or dysphoric state. So, apropos of the professional use of the term Koro, perhaps one should adhere to the clinical component of 'organ retraction' as the primary diagnostic criterion.

'Fear of impending death' does not always accompany a Koro pang. Penile dissolution, with the resultant loss of sexual power, is also a very common ideational component of Koro anxiety (Arbitman, 1975; Modai, Munitz and Aizenberg, 1986; Sajjad, 1991). An analysis of 101 male Koro cases showed that fear of impending death was present in 87% and that of sex organ damage (isolatedly or jointly) in 65% cases (Chowdhury, 1992b). Berrios and Morley (1984) found in their study that only 12.5% cases had fear of impending death whereas 43.8% had fear of intra-abdominal organ shrinkage. It has been seen that fear of sex organ damage or dissolution is an important element in the construction of Koro illness-paradigm that guides the social response (Rubin, 1982; Ngui, 1969; Chowdhury, 1989c, 1991a, 1992c; Tseng et al. 1992) and social treatment (Koro Study Team 1969; Edwards, 1984; Chowdhury et al. 1988) of Koro during epidemic. Yap(1965a) in his classical account notes only 15.8% cases with fear of death. Ngui (1969) in his 159 cases finds fear in the form of acute

anxiety in 90.5% cases without any specific mention about fear of impending death. Jilek (1986) reports "fear of death" in 100% cases while "feeling of impending death" in 21.9% of 232 Koro cases of the Guangdong (China) epidemic. Tseng et al. (1988) in another analysis of these Guangdong cases show a preoccupation with the idea of impending death in 62% cases. These are all epidemic frequencies.

Sporadic Koro reports also find that fear of impending death may well be absent as an ideational component of Koro anxiety (Ang and Weller, 1984; Malinick, Flaherty and Jobe, 1985; Scher, 1987; Smyth and Dean, 1992; Heyman and Fahy, 1992). Other ideational themes are : sex change to female or eunuch; non-specific physical danger; urinary obstruction; sterility; impending madness; spirit possession or bewitched feeling (Arbitman, 1975; Oyebode et al. 1986; Chen, 1991; Chowdhury, 1992b, 1994). The inclusion of just the 'fear of death' criterion as the diagnostic yardstick in Koro definition is therefore not justified.

The cognition of impending death with penile retraction has a strong cultural link with Chinese traditional beliefs. One thus notes the higher prevalence of 'fear of death' cognition among the cases of Chinese ethnicity. Fear of death here is not simply the usual thematic component of psychological symptom of anxiety (Wheeler et al. 1950) only. It has a deep cultural dimension too. The classical Taoist medical philosophy stresses that penis is the executive organ by which the male replenishes his *ching* or sexual energy by absorbing the female yin energy during intercourse. Deficiency of *ching* causes death (Rawson and Legeza, 1973) and hence the loss of penis is in all probability the harbinger of death. Marks and Lader (1973) are thus of the opinion that the Chinese cultural context influences the clinical features of anxiety states. Since male genitals are deemed essential for preservation of life and spermatic fluid is highly valued, it is not a surprising finding, as in one study (Tan, 1969), that among the male Chinese with anxiety states 60% complained of sexual symptoms (usually imagined spermatorrhea)

in contrast to only few male Malay patients.

AGE OF ONSET

The survey of world Koro literature shows that the reported lowest and highest ages are 8 and 54 years respectively (Chowdhury, 1994; Chowdhury et al, 1988).

An interesting situation in Children needs mention. There are reports of Koro epidemic where toddlers or very young children (4 months to 4 years) were brought to the physician with complaints of penis retraction or shrinkage (Mun, 1968; Rubin, 1982; Dutta, Phookan and Das, 1982). Obviously the complaints were not from the child but from his Koro-apprehended parent, usually the father. Should then a diagnosis of 'Koro-idea' (like the delusional idea) of the father/mother be made ?[1] This is a unique situation in psychiatry where the illness imposition is done by an other person(s) on someone who neither has any biological capacity to understand the nature of the illness nor is really suffering !

In this context the concept of social phobia which Kirmayer (1991) analyzes in relation to *Taijin Kyofusho* (TKS), a Japanese culture-bound syndrome, is pertinent. TKS refers to a host of fears in relation to interpersonal or social situations including fear of unpleasant or mishappen physical features (dysmorphophobia). The present situation of parental reaction to Koro may be viewed as a variant form, or an extension (by displacement to near and dear ones), of this dysmorphophobic fear in the face of specific social anxieties (Koro epidemic), similar to the delusional conviction of TKS in the Japanese cultural milieu. Excessive social anxiety in a conducive culture is at the root of this perception. A similar situation in TKS is termed by Prince (1988) as "referential social phobia". Kirmayer (1991) shows how a delusional fear of harming others through inappropriate behaviour or unwanted characteristics is rooted in the Japanese culture, which imposes stress (or social anxiety) in the "social

presentation of self" in TKS. A similar psychological principle is also operative in the parents of the supposedly Koro affected kids where deformed (imagined retracted penis) babies obviously generate great anxieties in their social presentation, except the fact that here the complaints are displaced onto the second person which Nandi et al. (1984) psychoanalytically put as follows :

> "Psychologically the fathers were the real victims of the (Koro) epidemic. But the symptoms were not centred on their own organs (ie, mutilation of the self). It spilled over to the organs of those whom they hold as dear as the self" (p. 334).

COURSE

Koro is usually regarded as an acute, brief, self-limiting solitary episode. However, there are patients who have Koro symptoms for years with either chronic and continuous or recurrent history ranging from three months to twenty years (Gwee, 1963; Berrios and Morley, 1984; Oyebode et al. 1986). Recently two classical Koro cases have been reported, one with recurrent Koro attack, once or twice a week for one year (Adityanjee and Subramaniam, 1991) and the other with multiple, recurrent, stereotyped episodes of Koro, twice or thrice daily, thrice or four times a week for five months (Chowdhury and Bera, 1994b). Should then a diagnosis of 'Chronic Koro' be an appropriate nosology for these cases ?

COMPLICATIONS

Complications arising out of Koro are not simply the impact of the illness itself. The individual and social (reflects cultural dimension) role in causing complications need to be categorized. These may be grouped as :

1. Psychosexual complications - depression, suicidal thoughts or attempt, disease conviction, impotency, sexual weakness or maladjustment, and general health problems etc.

2. Physical injury (penile) induced by self, e.g. application of caustic lotion, mechanical penile traction or introduction of metalic wire in the penile urethra etc.

3. Physical injury induced by others, e.g. penile injury due to manual or mechanical traction, hypothermic shock or bronchopneumonia and other complications of forced immersion or cold water pouring[2] or vomiting due to forced feeding of common salt (NaCl) (Chowdhury, 1991a).

PREVALENCE

Koro is no more a disease entity specific solely to the ethnic Chinese, nor it is restricted to the geography of south east Asian countries only. It is now reported from various non-Chinese populations across the globe, e.g., Thai, Indonesian, Indian, Sudanese (Baasher, 1963); Tanzanian (Lucieer, 1984-85); Nigerian (Ifabumuyi and Rwegellera, 1979); French (Burgeois, 1968); British (Barrett, 1978); Canadian (Ede, 1976), American, Jewish, West-Indian, Haitan, Ethiopian, Yemenite, Georgian, Greek-Cypriot and Nepali (Chowdhury and Rajbhandari, 1994).

FAMILY PATTERN

Koro is also found in families. Two Koro cases, both involving mental subnormality with features of Laurence-Moon-Biedl syndrome from the same family (siblings), were reported during the Singapore epidemic (Ngui, 1969). Two reports of the Indian Koro epidemic noted Koro in the same family. Chowdhury (1989d) found twentyone cases from nine families with different kinship distributions, viz. brother-brother; brother-sister; father-son; father-daughter and husband-wife. Sachdev (1985) also reports four Koro cases who had other Koro affected persons in their families.

FUTURE RESEARCH

Lastly, it should be noted that the pathoperception of organ retraction/shrinkage is not an example typical of Koro

only, nor is this perception just limited to the genitals in Koro. There are reports of perception of shrinkage of tongue, nose, ears, testis or anus or dilatation of vagina, associated with Koro (Rin, 1965; Arbitman, 1975; Tseng et al. 1988)[3]. In fact, Mo (1986) describes the classical Chinese concept of suo-yang illness as : (1) shrinkage of any protruded body part, e.g. penis, breast, nose, tongue, ears and vulva; (2) retraction of the protruded part(s) into the body cavities like abdomen, thorax or head, and (3) resulting death from complete retraction. Perception of shrinkage/retraction of brain matter, nerves, blood vessels, face, forehead and eyeballs is also noted in different psychiatric conditions[4], so the dimension of retraction/shrinkage of organ(s) is a characteristic perceptual deviation of body image per se (Schilder, 1935; Bychowsky, 1943; Yap, 1965a; Hollander et al. 1989; Stein et al. 1991) which in differrent psychodynamic dispositions may give rise to different symptoms, e.g., penile shrinkage or retraction in Koro, body shape and weight dissatisfaction in anorexia and bulimia nervosa; body dysmorphic disorder leading to plastic surgery (Shaw, 1981) etc.

Body Image and Koro

Koro is intimately linked with a sudden alteration in body (organ) perception (Kirmayer, 1992). Earlier, many researchers believed that body image deviation generates somatic depersonalization. A positive link between somatic depersonalization and hypochondriacal delusion has already been implicated in different psychopathologies (Mayer-Gross, 1935; Bychowski, 1943). As early as 1921 Kraeplin mentioned the 'shrinking of penis' as a hypochondriacal delusion to be found in the depressive state. It is pertinent to note here that Yap (1965a) describes Koro as a "unique example of depersonalization syndrome" with a marked influence of personality, social and cultural factors. In Koro, he states, "the depersonalization is seen as a dissociative mechanism affecting the integrity of the body image". Schilder (1935) tried to correlate depersonalization with melancholic mood state and asserted that the perception of localized

loss of vital or bodily feelings is characteristic in this context. An association between body image disturbances and dysphoric mood or affective disorder is reported by many. The occurrence of Koro in combination with affective disorder (depressive state) is also not very uncommon (Yap, 1965a,b; Arbitman, 1975; Ang and Weller, 1984; Modai et al. 1986; Oyebode et al. 1986; Turnier and Chouinard, 1990; Anderson, 1990; Chowdhury, 1992f).

Lukianowicz (1967) in his elegant study of body image disturbances found that in depressed subjects 50% experienced changes in the shape : 8.5% in the size; 8.5% in the position and 33% in the mass of the body parts. Bychowsky (1943) attempted a psychoanalytical theory of reactivation of narcissistic catharsis of the body image by dysphoric emotional state. He illustrated how an insignificant or trivial defect may generate a state of inferiority complex and get expressed in neurotic disturbances of body image. He cited case reports of manic depressive psychosis and involutional melancholia where the nonsignificant biological or physiological changes may have acted as a potential cause of somatopsychic disturbances, eventually manifesting as a perceptual distortion and experience of altered elements of the body image including the depersonalization of the genital organs. Hes and Nassi (1977) stress the role of a dual defense mechanism, viz. obsessive compulsive reaction and body image disturbance (penile retraction) in warding off castration anxiety and fear in Koro cases. Sims (1988) provides an account of various psychopathological states, like narcissism, hypochondriasis, hysteria, artefactual illness, dysmorphophobia, disturbances of feeding (and body size), where bodily complaints predominate without real organic basis and in many such instances the patients are having pathological body images.

Some recent findings of pharmacological intervention in body dysmorphic disorder are worthy of mention here. It is believed by many researchers that dysmorphophobia and monosymptomatic hypochondriasis are but two variants of the same disorders (Munro and Chamara,1982; Conolly and Gipson,1978). Hollander et al.(1989) argue that the fixed beliefs of body dysmorphic

disorders are phenomenologically similar to body dysmorphic psychosis. This contention presumes a biological mechanism which Hollander et al. corroborate with the treatment efficacy of pimozide (a dopamine receptor blocker) and of clomipramine (a potent serotonin reuptake blocker) in their monosymptomatic body-dysmorphic cases with the following complaints : a female having vascular markings on her nose that made her unattractive; a male whose face looked pale and whose cheekbones were mishappen; a male who had a mishappen nose; a female whose hair did not look right because it was not symmetric and a male who had a small and ugly penis. The last case had volumetric misperception (smallness) of a body part, viz. penis, like Koro cases. Jenike (1984) reports successful treatment with tranylcypromine, a monoamine oxidase iinhibitor, in a female with volumetric misperception (big) of body part, viz. "face had had swollen to enormous proportions and she looked like a 'monster'".

Stein, Frenkel and Hollander (1991) aptly categorize Koro to be a body dysmorphic disorder centred around the penis only. A deficiency in the body image is nicely demonstrated by Arbitman (1975) who found in a drawing test of human figures by a Canadian Koro patient an incomplete sketch with no genitals. Chowdhury(1989a,b,f; 1991b,c,d; 1993a,b) in a series of investigations using a graphomotor projective test - the Draw-a-penis test (DAPT) concerning penis image in Koro patients - found that they have a host of penile pathoperceptions in comparison to those of normal controls, viz. perception of reduced penis length and shaft width, perception of penis root as closed and penis as a detached organ and reduced attention towards glans as a specific penile area. Koro patients also showed a remarkable perceptual constancy regarding reduced penis length over a followup period of two years. So Koro may be viewed as an organ dysmorphic disorder or penile dysmorphophobia (Chowdhury, 1992d; 1993b).

Bernstein and Gaw (1990), however, objected to this categorization on the ground that dysmorphic disorders are related

to "static appearance", whereas Koro has to do with "active transformation" of body part, and, unlike the former, is associated with social and occupational dysfunctions. This reasoning is not without fallacy because body dysmorphic patients who crave for rhinoplasty or other cosmetic plastic surgery do have a history of marked personal and social maladjustments and disruption, often to a psychotic extent (Beale, Lisper and Palm, 1980; Hay, 1983; Crisp, 1981). Moreover, pre-Koro morbid penile concern (of either structure or function) in Koro is well evident in most of the reported cases. Secondly, every psychopathology has more or less a spectral disposition, the end point of which is a malignant form (Analogy : happy mood → hypomania → mania → delerious mania). So the "active transformations" of genital parts in Koro may well be viewed as the progression of the dysmorphophobic organ perception to its malignant form. A similar operational division of depersonalization, of benign (with little distress) and malignant (with disabling dysphoria) forms, has been done to justify the inclusion of varieties of symptoms of depersonalization (Mellor, 1988). Many in-depth clinical studies on Koro have shown that the patients have a convincing history (often of longstanding duration) of varieties of penile dissatisfactions, either of morphology or of functions, prior to their Koro attacks. These covert penile-preoccupations may well be considered as the benign expression of organ dysmorphophobia in Koro cases. In fact, in addition to the personality facors (Chowdhury, 1989e; 1991f) (high anxiety, increased suggestibility etc.) and conducive cultural influence. (Chowdhury, 1992a; Chowdhury et al., 1994), this underlying organ dysmorphic component is one of the crucial vulnerability factors that make an individual susceptible to develop Koro with either isolatedly or in an epidemic fashion when the extent of the benign perception escalates the level of cognitive tolerance by any environmental stimulation.

Hence it is a matter for future research to explore whether the Koro symptomatology is primarily the representation of body-image disturbances (Jilek, 1986; Mellor, 1988; Smyth and Dean, 1992) or is just a "cognitive amplification" (Kirmayer, 1992) and consequent pathological expression of cultural or ethnomedical

beliefs (Yap, 1965a; Gwee, 1968; Simons and Hughes, 1985). One has to, however, keep in mind that cultural beliefs also influence body-awareness (Jilek and Jilek-Aall, 1985; Sims, 1988) which in turn helps form ethnophysiological cognition of culture-specific syndromes. This is particularly important because causal attributions guide both symptom expression of and help-seeking by an individual (Kirmayer, 1984; Good and Kleinman, 1985; Chowdhury, Nath and Chakraborty, 1993).

NOTES

1. MO (1986) stressed the phobic nature of Koro due to unrealistic fear of death, which he designated as "Korophobia".

2. Cold is the predominant physical state which acts as precipitator of Koro in the Chinese context. In Indian epidemic on the contrary body heat is regarded as a major percipitator, thus entailing the socio-ritualistic healing method of cooling the body with cold water.

3. This author has seen twelve male patients in succession (a mini epidemic), age mean 18 ± 5.2 years, just after a Koro epidemic in the Kharibari region of Darjeeling district (India), who presented themselves with only the complaints of retraction of one (9 cases) or both (3 cases) testicles deep into the abdomen without any complaint or discomfort of penis. The illness was locally termed as "Beechi-out" disorder - 'Beechi' a Bengali slang syntax for testis, literal meaning of which is 'seed'. The meaning of 'out' is obvious - vanishing or disappearance. Interestingly, epidemics of penis vanishing or vanishing of breasts and pregnancies have been reported from Nigeria (Illechukwu, 1988).

4. A very common complaint of Bengali (Indian) housewives suffering from neurotic depression is the feeling of discomfort within the head due to shrinkage of brain matter

or pain in the body or limbs; due to intra-body pulling of nerves. An oft-noted symptom of male hypochondriac is the feeling of retraction of eyeballs due to intracranial pull. Perception of reduction of breast mass or retraction of visually prominent veins over the dorsal surface of the hand deep into the muscle is also noted in female and male obsessives respectively.