



Epidemic of Koro in North East India: An observational cross-sectional study



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ABSTRACT

Objective: Koro is a culture bound syndrome, endemic in South-East Asia. The present study attempts to correlate the socio-cultural and demographic variables of the patients with the occurrence of the Koro and the differences in presentation between the classical features of the Koro and the actual presentation of the disease that has been observed in the present study.

Method: A cross-sectional observational study was performed and data collected during the period was compared, analyzed and studied. A total number of 70 patients who presented to the Department of Psychiatry with symptoms of Koro over the period of 5 days were taken into the study.

Results: Most of the patients were, young, unmarried males belonging to a lower socioeconomic status. Most of these patients suffered the attacks in the evening mostly while at home. It was common in migrant and migrant lineage. Media had a major role to spread this epidemic.

Conclusions: Koro epidemics are considered to be the result of panic that spread following the occurrence of symptoms in one or more individuals within the same geographical zone. While the issues concerning phenomenology, diagnosis and nosology of Koro are still being discussed, it is apparent that Koro which presents as an acute anxiety state is treatment responsive and has good prognosis.

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1. Introduction

The earliest Western reference to the term Koro has been found in B.F Matthes' dictionary of Buginese language (1874) of South Sulawesi Indonesia (Chowdhury, 1998). Koro is also known by a variety of names, in China it is called "Suoyang" (Suo = shrinkinking, Yang = penis) (Cheng, 1997) or "suk-yeong" in Cantonese (Bernstein and Gaw, 1990), "Jhinjhinia Bemar" in Assam (India) (Dutta et al., 1982) to name a few. Koro has been defined in various textbooks as a culture bound syndrome that is characterized by a predominating belief and fear in the individuals that their genitals are retracting into the abdomen and may disappear which might lead to their death.

Koro was initially thought to be confined to people of South China and Yangtze valley and among migrant Chinese workers in the South East Asia region (Dutta et al., 1982; Gwee, 1963; Rin, 1965). Later Koro was also found in culturally different settings among people from India (Dutta et al., 1982; Nandi et al., 1983) and Western Africa (Dzokoto and Adams, 2005) among various other

places in the world. Though Koro usually presents in epidemics, sometimes patients of Koro also present sporadically as reported in America (Edwards, 1970), Britain (Barrett, 1978) and India (Chakravarty, 1982; Shukla and Mishra, 1981).

Koro is usually found among poorly educated young males and females who have an immature dependent personality and who lack confidence in their own virility. They may exhibit increased sexual behavior, are usually in conflict over the expression of their own genital impulses (Nandi et al., 1983). The etiology of Koro is unknown. Koro has been considered to be a "culture bound variant of hysteria" (Sachdev, 1985) or a "panic disorder" (Tseng et al., 1992) or a "sexual somatization disorder" (Chowdhury, 2008). The text revision of fourth edition of the Diagnostic and Statistical Manual of Mental disorders (DSM-IV-TR) classification of psychiatric disorders has listed Koro in the glossary of Culture Bound Syndromes (Appendix I) (American Psychiatric Association, 1994).

Clinically the disease starts with tingling sensation of hands and legs and an acute attack of sudden intense anxiety that the genitalia (and also the nipples in cases of females) (Dutta et al., 1982) will recede into the body which might result in death (Garlipp, 2008). The patient tries to stop the retraction of their genitals by tying strings around it or clamping it with hands or asking family members and friends to grasp the genitalia firmly so as to keep them in place. These actions sometimes result in damage

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to the genital organs (Cheng, 1997). The duration of each episode may vary from several minutes to several hours and even days.

1.1. Description of epidemic

An epidemic of Koro broke out in the north eastern state of Assam, India in September 2010, when few patients with classical symptoms of Koro reported in emergency department of Gauhati Medical College and Hospital. Within next few days the number of cases reporting to different hospitals and nursing homes of the city increased rapidly and the phenomenon came to be widely reported by different media like newspaper, television and magazines. It was observed that initially all the cases belonged to a particular area of the city while the later cases were from different parts of the city as well as nearby districts of the state. Finally the epidemic spread to all communities and classes of population and affected thousands of people in the state. Patients attended primary health centers, district hospitals, nursing homes and medical colleges of the state (Roy et al., 2011). We observed that media had played significant role in spreading the news of the disease. Lots of people were seen in the Guwahati with smeared lime on ears and wearing amulets. A unit of psychiatrists was formed in Gauhati Medical College and Hospital and other institutions also to control the epidemic. Health services of Assam had started mass education programs in all communities about the illness through various mass media, social workers and doctors' team. Consequently in next 2–3 weeks the incidence of cases reduced in all parts of the state.

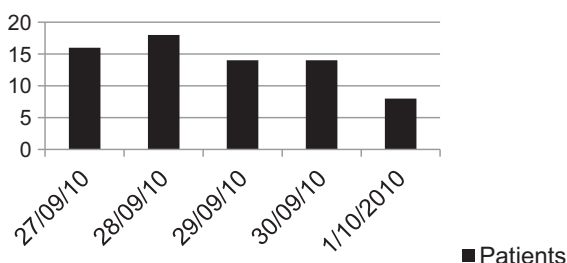
After diagnosing this illness as an epidemic of Koro, we attempted to study these cases with following objects in view:

1. To study the phenomenology of the current Koro cases and differences in presentation of the disease that has been observed in the previous studies.
2. To relate the socioeconomic and demographical variables of the patient population with the occurrence of the disease.

2. Materials and method

2.1. Cases

The Koro outbreak was reported from certain areas of city of Guwahati, India and neighboring districts and peak wave occurred from last week of September 2010 to first week of October 2010. We conducted a cross-sectional observational study on 70 cases of Koro over a 5 days duration (27-9-10 to 1-10-10) (Graph 1) who attended Gauhati Medical College and Hospital. Patients were attended either in emergency department or outpatient department of the hospital. All cases were interviewed by members of the psychiatric unit that was formed to manage cases. A semi-structured case history sheet was developed to maintain uniform case information. Elaborate history was taken from cases



Graph 1. Datewise presentation of koro patients taken in the study.

pertaining to age, gender, level of education, marital status and clinical variables like various symptoms of the disease, place of occurrence of the disease and previous knowledge of the disease and other temporally related events or other precipitating factors.

Patients with co-existing psychiatric illness like schizophrenia, delusional disorder, other psychosis or any significant medical and surgical genital's illness were excluded from the study. We have used DSM-IV-TR (American Psychiatric Association, 1994) diagnostic criteria for Koro to diagnose the patients. Written informed consent was taken for the study. The data collected during the period were compared, analyzed and studied.

3. Results

We studied 70 cases of Koro who attended Gauhati Medical College and Hospital.

3.1. Sociodemographic and clinical variables: (Tables 1 and 2)

3.1.1. Gender

Typically patients of Koro were males 97.1% ($n = 68$) and only 2.8% ($n = 2$) were female.

3.1.2. Age group

Most common presentation was among young males in age group of 21–30 years in 61.4% ($n = 43$) followed by 31–40 years in 18.6% ($n = 13$) and 11–20 years in 12.8% ($n = 9$). Only 7.1% ($n = 5$) patients were above 40 years of age. The female patients belonged to 31–40 years of age group.

3.1.3. Marital status

Most of them 70% ($n = 49$) were unmarried males. 44.9% ($n = 22$) had preoccupation with masturbatory practice and 36.7% ($n = 18$) complained of passing of semen in their urine and spontaneous ejaculation of semen in night (Dhat syndrome). 30% ($n = 21$) of patients were married and 28% ($n = 6$) of them staying alone away from wife. In few of the married patients the shortening of penis was noticed by their wife during intercourse. All of the patients were concerned about their future sexual life.

Table 1
Showing socio demographical variables.

Socio demographic variables	Total $n = 70$	Percentage
Gender		
Male	68	97.1
Female	2	2.8
Age (years)		
11–20	9	12.85
21–30	43	61.42
31–40	13	18.57
Above 40	5	7.14
Marital status		
Married	21	30
Single	49	70
Place of presentation		
Casualty department	48	68.57
Outdoor patient department	22	31.42
Religion		
Hindu	45	64.25
Islam	24	34.28
Sikh	1	1.4
Socioeconomic status		
Lower socioeconomic status	44	62.85
Middle socioeconomic status	26	37.14
Higher socioeconomic status	–	–
Education		
Illiterate	7	10
Below high school	13	18.57
Above high school	50	71.42

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