EPIDEMIOLOGY OF ANXIETY DISORDERS

OUTLINES

- Introduction
- Magnitude of anxiety disorders
- Generalized anxiety disorder
- Agoraphobia
- Social phobia
- Specific phobia
- Children and adolescents
- Indian research in anxiety disorders
- Patterns of comorbidity
- Conclusion

INTRODUCTION

- Anxiety disorders are the most prevalent psychiatric syndromes in the worldwide population.
- Nearly one-fifth (17 percent) of adults report a lifetime history of one of the major anxiety disorders, and 1 in 10 suffer from a current anxiety disorder.
- Anxiety disorders are associated with intense subjective distress and social impairment, and their childhood and adolescent onset can interfere with accomplishment of social, educational, and occupational functioning.

INTRODUCTION

- The most recent estimates of the Global Burden of Anxiety reveal that anxiety disorders explain 10 percent of the disability-adjusted life years for all mental, neurologic, and substance use disorders, second only to major depression

- Population-based studies across the world have shown that anxiety disorders are the most common class of mental disorders.

- Epidemiology has made a valuable contribution to the current understanding of anxiety disorders by documenting the prevalence, correlates, and natural history of anxiety disorders, and highlighting the gap between untreated anxiety disorders in the general population compared to cases seen in clinical settings.

INTRODUCTION

- Epidemiology is the study of the distribution and determinants of diseases in human populations.
- Epidemiologic studies are concerned with the extent and types of illnesses in groups of people and with the factors that influence their distribution.
- The ultimate goal of epidemiologic studies is to identify the *etiology* of a disease in order to prevent or intervene in the progression of the disorder.

MAGNITUDE OF ANXIETY DISORDERS

- **ADULTS**
- During the last decade there has been an increasing focus on the anxiety disorders, which have emerged as the most prevalent mental disorders in the general population.

- According to the NCS-R, a nationally representative sample of 9,282 adults in the United States, anxiety disorders affect nearly one in five adults in the U.S. population.

- International community surveys such as the Zurich Cohort Study and the Netherlands Mental Health Survey and Incidence Study (NEMESIS) yielded comparable lifetime prevalence rates of anxiety disorders, and a recent international review of anxiety studies estimated a total lifetime prevalence of 16.6 percent.

GENERALIZED ANXIETY DISORDER

- Generalized anxiety disorder (GAD) has also been extensively examined across the globe.
- Although the 12-month prevalence of GAD falls between 2.1 and 3.1 % in both large-scale studies of the United States (National Epidemiologic Survey on Alcohol and Related Conditions [NESARC] and NCS-R), rates in other areas of the world ranged from 0 % in Nigeria to 2.6 % in Germany.
- The lifetime prevalence of GAD was even more variable, with the lowest rate reported in Nigeria (0.1 %) and the highest in Italy (6.9 %), with a median of approximately 2.3 %

AGORAPHOBIA

- Apart from an elevated 12-month prevalence of agoraphobia reported in South Africa (4.8 %), the rates of agoraphobia were remarkably consistent across regions.
- Nine separate international studies reported estimates ranging from 0 % (China) to 0.8% (United States)
- The lifetime prevalence estimates were similarly consistent, with the lifetime prevalence of DSM-IV agoraphobia ranging anywhere from 0 % (China) to 1.2 % of the population (Italy and New Zealand).

SOCIAL PHOBIA

- The 12-month and lifetime prevalence rates of *DSM-IV* specific phobia varied across studies.
- The 12-month prevalence estimates ranged from 1.9 % (china) to 8.7 % (US).
- Estimates for lifetime specific phobia were lowest in Italy (1.5%) and highest in New Zealand (10.8 %), with a median of 6 %
- As with other disorders, reasons for these inconsistencies need to be examined further in order to distinguish between true differences in prevalence and those attributable to methodologic differences between studies.

SPECIFIC PHOBIA

- Similar to the estimates reported for social phobia, the 12-month and lifetime prevalence rates of DSM-IV specific phobia varied across studies.

- 12-month prevalence estimates ranged from 1.9 %(China) to 8.7 %(United States).

- Estimates for lifetime specific phobia were lowest in Italy (1.5 %) and highest in New Zealand (10.8 %)

OBSESSIVE-COMPULSIVE DISORDER

- Both the 12-month and lifetime prevalence rates of DSM-IV OCD are fairly consistent across studies.

- Overall, the 12-month prevalence is very low, with a range of rates from 0.1 percent (Lebanon and Nigeria) to 1.0 percent (United States).

- Lifetime prevalence was also rather low, ranging from 0.1 percent (Nigeria) to 2.4 percent (Italy).

CHILDREN AND ADOLESCENTS

- During the past decade, the first results of the prevalence of anxiety disorders in nationally representative samples of the united states have become available.
- The flagship study of the WMH initiative, the NCS-R, was extended to adolescents aged 13 to 18 years using the same diagnostic methodology.
- Compares the 12-month and lifetime prevalence rates in adults and adolescents in these studies.
- The high aggregate rates of anxiety in adults **(28.8 %) and youth (31.9 %)** demonstrate that anxiety disorder is the most common mental disorder in both adults and adolescents compared to **mood disorder** that affects approximately **15 to 20 %** of both adults and youth.

Table 14.3–2.
12-Month and Lifetime Rates of DSM-IV Anxiety Disorders in the National Comorbidity Survey Replication (Adults) and Supplement (Adolescents)

	NCS-R (Adults)		NCS-A (Adolescents)						
			Lifetime by Sex (%)		Lifetime by Age (%)			12-mo (%)	Lifetime (%)
Anxiety Disorder Subtype	12-mo (%)	Lifetime (%)	Female	Male	13–14 y	15–16 y	17–18 y		
Agoraphobia	0.8	1.4	3.4	1.4	2.5	2.5	2.0	1.8	2.4
Generalized anxiety disorder	3.1	5.7	3.0	1.5	1.0	2.8	3.0	1.1	2.2
Panic disorder	2.7	4.7	2.6	2.0	1.8	2.3	3.3	1.9	2.3
Separation anxiety disorder	6.6	5.2	9.0	6.3	7.8	8.0	6.7	1.6	7.6
Social anxiety disorder	6.8	12.1	11.2	7.0	7.7	9.7	10.1	8.2	9.1
Specific phobia	8.7	12.5	22.1	16.7	21.6	18.3	17.7	15.8	19.3
Any anxiety disorder	18.1	28.8	38.0	26.1	31.4	32.1	32.3	24.9	31.9

CORRELATES AND RISK FACTORS

Sex differences

- The results of community studies in adults reveal that compared to men, women have greater rates of almost all of the anxiety disorders.
- Women have an approximately two-fold elevation in lifetime rates of panic disorder, GAD, Agoraphobia, and specific phobia than males in nearly all of the studies.
- The sex ratio for social anxiety is approximately equal.
- Studies of youth also report that girls tend to have more of all subtypes of anxiety disorders, irrespective of the age composition of the sample.

AGE OF ONSET

- Retrospective reports of adults with anxiety disorders suggest that the onset generally occurs in childhood or adolescence.
- For example, results of the NCS-R reveal that anxiety disorders have the earliest age of onset of all of the major classes of mental and behavioral disorders, with a median onset by the age of 12 years.
- This is far earlier than the onset of mood disorders or substance use disorders and comparable to that of impulse control disorders.

AGE OF ONSET

- Although there is substantial variation across studies, the results of prospective community-based research reveal differential peak periods of onset of specific subtypes of anxiety:-
- Separation anxiety and specific phobias in middle childhood
- Overanxious disorder in late childhood
- Social phobia in middle adolescence
- Panic disorder in late adolescence
- GAD in young adulthood
- OCD in early adulthood

INDIAN RESEARCH IN ANXIETY DISORDERS

EPIDEMIOLOGICAL STUDIES

- There are three meta-analyses of Indian epidemiological studies of psychiatric disorders.
- A meta-analysis of 13 psychiatric epidemiological studies **(reddy and chandrashekhara)** with a total sample size of 33,572 subjects who met the following criteria,door-to-door survey
- All age groups included and prevalence rate for urban and rural being available
- An estimated prevalence rate of 20.7% (18.7-22.7) for all neurotic disorders which was reported to be highest among all psychiatric disorders.

INDIAN RESEARCH IN ANXIETY DISORDERS

The weighted prevalence rates of different anxiety disorders were

- 4.2% (Phobia)
- 5.8% (GAD)
- 3.1% (Obsession)
- 4.5% (Hysteria)
- Panic disorder was not included in this meta-analysis and the reason for this is surprisingly not discussed.
- This meta-analysis also reported that prevalence rates of all neurotic disorders except hysteria (5.0% vs. 3.4%, $P < 0.5$) were significantly higher (35.7% vs. 13.9%, $P< 0.01$) in urban communities than rural, and all neurotic disorders were significantly high among females (32.2% vs. 9.7%, $P < 0.01$).

INDIAN RESEARCH IN ANXIETY DISORDERS

- It has been seen that rural epidemiological studies are more difficult to conduct as compared to urban ones, due to ignorance, stigma and lack of resources.
- Disorders like obsessive compulsive disorder often go unaccounted due to ignorance and attribution of such issues to personality factors
- This can be a possible explanation for higher prevalence of anxiety disorders in urban areas than to the same in rural areas.
- Disorders like hysteria are accounted in a more reliable manner and are significantly more common in rural communities because of visible manifestation of the disease (reddy and chandrashekhara)

INDIAN RESEARCH IN ANXIETY DISORDERS

- **Ganguli** analysed 15 epidemiological studies on psychiatric morbidity in India.
- In this meta-analysis prevalence rate (in per thousands) of anxiety neurosis was reported to be 16.5 with a rural urban ratio of **100:106** and that of hysteria was 3.3 with a rural urban ratio of 100:44.
- These findings of meta-analysis were consistent with that of reported in meta-analysis by **Reddy and Chandrashekhara.**
- **Madhav,** in an analysis of 10 Indian studies on psychiatric morbidity, concluded that prevalence rates for anxiety neurosis and hysteria were 18.5 and 4.1 per 1000 population respectively.

EPIDEMIOLOGY OF ANXIETY DISORDERS IN PEDIATRIC POPULATION

- A prevalence rate of psychiatric morbidity among pediatric population has been reported since very early (Sethi *et al*.) but these studies did not report prevalence rates of anxiety disorders separately.
- In one of the earliest known report on neurotic disorders, **Nagaraja** observed childhood neuroses in 9.7% of out-patient population and 9.3% of inpatients over a period of seven years in Hyderabad with a male to female ratio of 1:2.
- **Manchanda *et al***. found neurotic behavior in 27.3% children admitted for physical ailments.
- In children seen at the Child Guidance Clinic of the Madras Government General Hospital during the year 1964-1966, Raju *et al*. found that 22 of the 592 children were neurotics and 16 were hysterical.

EPIDEMIOLOGY OF ANXIETY DISORDERS IN PEDIATRIC POPULATION

- Later, in an urban survey of 109 families for psychiatric morbidity in children below 12 years, **Lal and Sethi** reported emotional disturbance in 55% families and 35.4% of the total children surveyed.
- Neurotic disorders were found in 11.0% of the total sample, but the clinical states mentioned there in were extremely varied and did not follow any classificatory scheme

EPIDEMIOLOGY OF ANXIETY DISORDERS IN PEDIATRIC POPULATION

- In an another epidemiological study conducted by **Manchanda and Manchanda**, a total of 19 children (up to 12 years) from the Pediatric inpatient and Child Guidance Clinic (CGC) were diagnosed to be suffering from a neurotic disorder during a period of 11 months.
- Incidence of neuroses was 1.1% among pediatric in patients and 8.2% in CGC.
- The incidence was higher in the females. 73.5% of children were in the age range of 10-12 years.
- None of them were below six years. Hysteria was the commonest diagnostic group (71.4%) in the present study.

EPIDEMIOLOGY OF ANXIETY DISORDERS IN PEDIATRIC POPULATION

- Other disorders in order of frequency were-
- Anxiety (16.3%)
- Depression (6.1%)
- Phobia (4.1%)
- Obsessive compulsive neurosis was observed in one case only

EPIDEMIOLOGY OF ANXIETY DISORDERS IN PEDIATRIC POPULATION

- Recently a community-based study was conducted by ICMR in Lucknow (ICMR,) and Bangalore (Srinath *et al*.)
- in children and adolescent age 10-16 years. The prevalence rates of various anxiety disorders,

Table 1

Prevalence of anxiety disorders in pediatric population

Disease as per ICD-9	In Lucknow center (n = 2325) (%)	At Bangalore center (n = 1578) (%)
Social phobia	0.19	0.19
SAD	0.09	0.2
GAD	0.14	0.3
Simple phobia	1.98	2.9
Agoraphobia	0.05	0.1
Panic	0.05	0.1
OCD	0.09	0.1
Conversion disorders	0.17	Not reported

EPIDEMIOLOGY OF ANXIETY DISORDERS IN ELDERLY

- Epidemiological data of anxiety disorder in special population like pediatric and elderly are scant.
- To the best of the author's knowledge, one population-based study on geriatric population was reported by **Tiwari and Srivastava**
- These authors identified 488 elderly subjects in a rural region of Uttar Pradesh. Nearly 9% of the subjects were diagnosed with ICD-9 (World Health Organization) anxiety neurosis.
- These data may contain unknown biases because over 42% of the geriatric population was assigned a psychiatric diagnosis, in contrast less than 4% of non-Geriatric subjects had an ICD-9 psychiatric diagnosis.

SOCIAL CLASS AND ETHNICITY

- Community studies have consistently found that rates of anxiety disorders in general are greater among those at lower levels of socioeconomic status and education levels.
- Anxiety disorders were negatively associated with income and education levels in the NCS.
- For example, there is almost a twofold difference between rates of anxiety disorders in individuals in the highest income bracket over the lowest and in those who completed more than 16 years of school versus less than 11 years. However, this association with education was not found in the NCS-R

SOCIAL CLASS AND ETHNICITY

- Certain anxiety disorders also seem to be elevated in specific occupations.
- According to the NEMESIS study, anxiety disorders were higher in homemakers and individuals who were unemployed or with a disability.
- Similarly, the NCS found higher levels of GAD and phobias in homemakers, students, and other unemployed persons.

PATTERNS OF COMORBIDITY

- Comorbidity between anxiety disorders and other mental disorders is already apparent in childhood and adolescence.
- Anxiety disorders are associated with all of the other major classes of disorders, including mood disorders, disruptive behaviors, eating disorders, and substance use disorders.
- The co-occurrence of anxiety disorders and mood disorders is so common that there is emerging evidence that anxiety disorders may be part of the developmental sequence in which anxiety is expressed early in life followed by depression in adulthood.

PATTERNS OF COMORBIDITY

- Both family and twin studies have been used to examine sources of overlap within the anxiety disorders and between the anxiety disorders and other syndromes, including depression, eating disorders, and substance abuse.
- With respect to comorbidity, panic disorder, GAD, and depression have been shown to share common familial and genetic liability, whereas there is substantial evidence for the independent etiology of anxiety disorders and substance use disorders.
- Similar results have emerged from studies of symptoms of anxiety and depression in both youth and adults, in which anxiety and depression were found to result from a common genetic diathesis

TEMPERAMENT/PERSONALITY

- One of the earliest indicators of vulnerability to the development of anxiety is behavioral inhibition, characterized by increased physiological reactivity or behavioral withdrawal in the face of novel stimuli or challenging situations

- Behavioral inhibition may be a manifestation of a biological predisposition characterized by both overt behavioral and physiological measures.

MEDICAL SYMPTOMS/DISORDERS

- Community samples have now begun to replicate the comorbidity of anxiety disorders with several medical conditions that had been described in clinical samples.
- Recent studies of both adults and children have confirmed a strong association between asthma and allergies with anxiety disorders.
- Other physical conditions associated with anxiety disorders in community surveys include epilepsy, cardiovascular disease, and migraine.

LIFE EVENTS/STRESSORS

- Life events have often been designated a causal role in the onset of phobias, which are linked inherently to particular events or objects.
- It is likely that life stress may exacerbate phobic and generalized anxiety states, phobic states resulting from exposure are far rarer than those that emerge with no apparent exposure.
- In contrast, post traumatic stress disorder is defined as a sequela of a catastrophic life event.
- Stressful life events may interact with other risk factors such as family history of depression in precipitating episodes of panic.

CONCLUSION

- Status of anxiety disorder research from India in relation to epidemiology, phenomenology, course, outcome and management are lacking.
- Research areas like family studies, genetics, and neurobiology are not touched adequately.
- Most of the studies have tried to replicate the findings from the West.
- Despite rapid advancement in the field of psychopharmacology, the researches in the field of anti-anxiety and antidepressant drugs are dismally low from India.

CONCLUSION

- Further more research is lacking in the areas of non-pharmacological management like relaxation therapies, yoga, other meditation techniques and psychotherapies despite India being the birth place of many such techniques.

- Most of the research is done by tertiary centres involving limited sample which may not provide the real picture.

REFERENCES

- Kaplan & Sadock's comprehensive textbook of psychiatry, 10th edition

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3146193/#CIT14

THANK YOU