

Neurasthenia Spectrum Disorders: Clinical Cultural Epidemiology in Pune, India

INAUGURALDISSERTATION
zur
Erlangung der Würde eines Doktors der Philosophie
vorgelegt der
Philosophisch-Naturwissenschaftlichen Fakultät
der **Universität Basel**

VON
Vasudeo Paralikar
aus Pune, Indien

Basel, 2012

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Basel, den 13. Dezember 2011

Prof. Dr. Martin Spiess

Dekan

Man sieht was man kennt.

Non-reward is equivalent to punishment; and non-punishment is equivalent to reward.

Contents

Abstract	v
Acknowledgments	vii
Zusammenfassung	x
Summary	xv
List of Tables	xx
List of Figures	xxii
List of Abbreviations	xxiii
The Study Clinics	xxiv
1. Introduction and Methods	1
1.1 Featured importance of Neurasthenia Spectrum Disorders (NSDs)	2
1.2 Scope and interest of the literature	3
1.3 Clinical interests	5
1.4 Public health interests	6
1.5 Historical considerations	6
1.6 Cultural psychiatry and NSDs	7
1.7 Situation in India	8
1.8 Research needs	10

1.9 Objectives	12
1.10 Methods	12
1.11 Ethics Review	17
1.12 Organization of the following chapters	17
1.13 References	19
2. Prevalence of Neurasthenia Spectrum Disorders in specialty outpatient clinics of Pune, India	25
2.1 Abstract:	26
2.2 Introduction	26
2.3 Objectives	27
2.4 Setting	27
2.5 Methods	28
2.6 Results	29
2.7 Discussion	33
2.8 Implications	35
2.9 References	37
3. Biomedical markers and psychiatric morbidity of Neurasthenia Spectrum Disorders in four outpatient clinics in India	39
3.1 Abstract	40
3.2 Introduction	40
3.3 Objectives	42
3.4 Methods	42
3.5 Results	45
3.6 Discussion	52
3.7 References	57
4. Diagnostic concordance of Neurasthenia Spectrum Disorders in Pune, India	60
4.1 Abstract	61
4.2 Introduction	61
4.3 Objectives	63
4.4 Methods	63

4.5	Results	65
4.6	Discussion	70
4.7	References	75
5.	Cultural Epidemiology of Neurasthenia Spectrum Disorders in four general hospital outpatient clinics of urban Pune, India	78
5.1	Abstract	79
5.2	Introduction	79
5.3	Objectives	80
5.4	Methods	80
5.5	Results	83
5.6	Discussion	95
5.7	References	102
6.	Discussion: contributions and implications of the research	105
6.1	Contributions and implications	106
6.2	Phase 1: Prevalence Study	106
6.3	Phase 2: Clinical Cultural Studies	108
6.4	Clinical Implications	118
6.5	Public health implications	122
6.6	Clinical epidemiology and interdisciplinary collaboration	125
6.7	Research questions for further study	126
6.8	Conclusion	129
6.9	References	131
7.	Appendices	138
7.1	Prevalence survey assessment schedule	138
7.2	Diagnostic criteria for existing NSD formulations	139
7.3	Biomedical and anthropometric parameters	142
7.4	SCID-P (Version 1.0) SUPPLEMENT (1) CFS & Neurasthenia J.1	143
8.	Curriculum Vitae	153

Abstract

Background. Persistent and unexplained fatigue and weakness constitute disorders, such as Chronic Fatigue Syndrome (CFS) in USA, fibromyalgia in Europe, and Neurasthenia (NT) in East Asia. Their overlapping diagnostic criteria include essential clinical and additional culture-specific features. They are best regarded as Neurasthenia Spectrum Disorders (NSDs) focusing on essential clinical criteria. Because clinical understanding is limited, public health challenges are more difficult. Psychiatric comorbidity is frequent, e.g. fatigue with depression. NSDs are rarely diagnosed or researched in India. Therefore, we aimed to study clinical cultural epidemiology of NSDs in urban general hospital in Pune, India.

Methods. We did a set of cross-sectional studies. Prevalence was estimated by survey of 1,874 consecutive outpatients in clinics of Psychiatry, Medicine, Dermatology, and Ayurved by a brief semi-structured interview. In phase 2, using the same tool, 352 patients were studied in the same clinics with informed consent. A small case-control design compared biomedical markers with controls. SCID-I was used for psychiatric diagnoses. Hamilton scales and SCL-90+ measured dimensional psychopathology. Diagnostic interviews for CFS and NTs (3 definitions: ICD-10, DSM-IV draft, CCMD-2) measured their agreement and sensitivity across the four clinics. EMIC interviews assessed and compared quantitative and qualitative aspects of illness experience (PD), meaning (PC), and help seeking (HS). Appropriate statistical methods were used to compare frequencies, means, and mean prominence; and to test concordance of CFS and NTs.

Results. Prevalence of NSD was 5% across four clinics, but higher in Dermatology and Ayurved clinics, and among women (63.8%). Haemoglobin and BMI were similar in patients and controls, but Corrected Arm Muscle Area was lower in patients. Non-specific anxiety and somatoform disorders outnumbered depression (mostly in Psychiatry clinic). Hamilton and SCL scores were highest in Psychiatry and lowest in Ayurved. Pairwise and four-way

concordance among four NSDs was very poor ($\kappa=0.02$). EMIC interviews showed weakness more than fatigue, 'tensions', future worries, need for support, and diverse and clinic-specific explanatory models with normative stresses. Biological explanatory models were prominent in Medicine, psychological ones in Psychiatry, cultural ones in Dermatology, and multiple ones in Ayurved clinics. Social models and poor health habits, weakness, and sexual-reproductive PCs were common across clinics. Dissatisfied patients sought help from many medical and non-medical sources.

Conclusions. High burden and emotional distress, sarcopenia, anxiety and somatization more than depression and 'weakness with anxiety' are salient features. NSDs may be explained physiologically and psychologically. Diversity with prominent psychological models is notable. Women's narratives showed role multiplicity and poor supports. Men's concerns were the overwork, inadequacy and sexual PCs. Rapid urban development, frustration and demoralization are important cultural contexts. Cultural studies are necessary for clinical and public health purposes.

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I have long believed and realized time and again that a healthy teacher-student relationship is an essential feature of mental health, as originally proposed by Alfred Adler. I am lucky to have had many teachers who enriched my career and life.

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My research assistants still have a good relationship with me, although all of them have moved on to other work. They initially wondered and asked me why I was so humble with patients and with research assistants. I explained that it was as if my neck was in their hands, because the faithful obtaining and reporting of data was the heart of the project, and they were at the forefront, especially when I was unfortunately repatriated to the mental hospital from the research site at a crucial time. When I work with our study data, I feel satisfaction and appreciation of their honest work, particularly Dr S. Deshpande, and I am grateful to them.

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Zusammenfassung

Neurasthenische Störungen (Neuresthenia Spectrum Disorders - NSD), die früher als Erschöpfung oder Ermüdung gesehen wurde, beziehen sich auf medizinisch unerklärbare dauerhafte Müdigkeit, die den Betroffenen dazu zwingt, Lösungen für seine durch die Müdigkeit hervorgerufenen Probleme zu suchen. Dieser Zustand beinhaltet CFS und NT. Obwohl es in den Entwicklungsländern wesentlich umfangreichere Forschungen auf diesem Gebiet gibt, bleibt diese Nosologie zweifelhaft und umstritten, aufgrund der biologischen Definition im Westen und der soziologischen Bestimmungen im Osten, auch wenn sich die wesentlichen klinischen Ergebnisse gleichen. NSDs verursachen ernsthafte klinische und konzeptionelle Herausforderungen für die öffentliche Gesundheit. Klinische Herausforderungen entstehen aufgrund des mangelnden Verständnisses von Ätiologie, unterschiedliche und vage klinische Befunde, chronischen Verlaufs - dies kann zu Unzufriedenheit und Burnout Syndrom beim Patienten führen. Hinzu kommen die hohen finanziellen Belastungen durch die Kosten der Behandlung bei aufgrund der Erkrankung wegfallendem Einkommen. Unter diesen klinischen Herausforderungen leidet die soziale und gesellschaftliche Gesundheit. Daher strebten wir eine Untersuchung im Bereich klinische und kulturelle Epidemiologie von NSDs im staatlichen Krankenhaus der Großstadt Pune, Indien an.

Ausgangspunkt

Bedeutende interkulturelle Variationen und Fragen bezüglich des Zusammenhangs zwischen NSDs, Depressionen und Somatisierung waren der Ausgangspunkt für die fundamentalen Entwicklungen auf dem Gebiet der interkulturellen psychiatrischen Theorie und Forschung. Erstzunehmende Debatten über die Eigenschaften der NSDs, deren Bezug zu Depressionen sowie die Rolle der ursprünglichen sozialen und kulturellen Bestimmungsfaktoren, ihre Dauerhaftigkeit und Umwandlung haben zur

Entwicklung in diesem Bereich beigetragen.

Die Gesellschaftstheorie neigt dazu, NSDs mit soziokulturellen Kategorien zu verbinden und nicht mit klinischen Störungen. Als wesentliche Faktoren für die Kontextualisierung des Ungleichgewichts zwischen der Ambition und der sozialen Belastbarkeit aufgrund von psychosomatischen und soziologischen Leiden verdeutlicht durch gegenwärtige kulturelle Idiome gelten Urbanisierung, schneller Wachstum, die Relevanz von materiellem Besitz und Erfolg und besonders auch die wachsende Rolle der Frau. Auch wenn das kulturell tief verankerte Konzept des Dhat Syndroms viele Merkmale des NSD beinhaltet, so werden diese dennoch nicht regelmaessig in Indien diagnostiziert und erforscht.

Dieses Projekt wurde mit Bezug zu global wissenschaftlichen, interkulturellen und lokalen Zusammenhängen von kulturellen Störungen durch Ermüdung und Kraftlosigkeit in Indien konzipiert. Es ist eine von mehreren zwischenstaatlichen Studien zu Ermüdungsstörungen, die in Asien und Nordamerika durchgeführt wurde. Sie soll dazu beitragen, die epidemiologischen Folgen zu messen und zu behandeln sowie die biomedizinischen und psychiatrischen Begleiterscheinungen zu bewerten und die vorhandenen Formulierungen von NSDs zu vergleichen. Die Rolle der kulturellen Epidemiologie bei der Erklärung dieser Störungen sowie dem Einleiten von Behandlung und Vorsorge in einer staettischen Umgebung war es, die Krankheitserfahrungen der Patienten, Bedeutungen, Erfahrungen und Erwartungen bei der Suche nach Hilfe aufzunehmen. Für diese auf der klinischen Praxis basierenden Studie wurde ein mehrere Methoden verbindender Forschungsansatz verwendet.

Erste Forschungsphase

In der ersten Phase wurde das Vorhandensein der NSD Kernkriterien in vier ambulanten Spezialabteilungen eines grossen staettischen Krankenhauses untersucht. Dieses Krankenhaus war an eine Hochschule für primaere und tertiaere Behandlungen angegliedert. Die Kliniken für Psychiatrie, Medizin, Dermatologie und Ayurveda zeigten kulturell beeinflussten Zugang zur medizinischen Versorgung, was die Bewertung von NSDs in klinischen Subkulturen ermöglichte. Es zeigte sich eine allgemeine Verbreitung von 5% unter 1.874 Patienten, wobei Frauen und Dermatologiepatienten haeuffiger betroffen waren. Die Entwicklung dieses semi-strukturierten Forschungsinstruments für Interviews um Patienten auf klinisch bedeutende jedoch medizinisch unerklärte Erschöpfung und Kraftlosigkeit zu untersuchen, ist ein wertvoller Beitrag für die Feldforschung in diesem Fachgebiet.

Zweite Forschungsphase

Für die zweite Phase - unter Verwendung des gleichen Forschungsinstruments - wurden Patienten aus den gleichen Kliniken für eine tiefere Studie ausgewählt. Es wurde mit einer Ursachenanalyse begonnen um die biomedizinischen Marker zu identifizieren, wobei vergleichbare Werte für Haemoglobin und Body-Mass-Index (BMI) gefunden wurden. Dies stimmte mit der klinischen Beurteilung dieser bisher medizinisch nicht geklärten Umständen überein. Anthropometrische Messungen zeigten einen signifikanten Mangel an Muskelmasse im Vergleich mit gesunden Personen der sogenannten Kontrollgruppe. Diese eher kleine Kontrollgruppe wurde in einer psychiatrischen Klinik zusammengestellt, sie besteht aus Patienten mit anderen Erkrankungen jedoch ohne NSD. Weiter wurde angestrebt, die psychiatrische Erkrankungsrate unter NSD Patienten herauszufinden. Diagnostische Interviews für psychiatrische Probleme wurden unter der Verwendung von SCID-I/P (strukturiertes klinisches Interview für DSM-IV-TR axis I Störung-Patient-Version (Forschungsversion)) durchgeführt. Angststörungen waren besonders häufig, gefolgt von somatoformen Störungen und Depressionen. Die höchste Rate von Depressionen wurde in einer psychiatrischen Klinik gefunden, generelle Angststörungen (Generalized Anxiety Disorder - GAD) und Anpassungsstörungen traten hauptsächlich in der medizinischen Klinik, unspezifische Angst in der Dermatologie und nichtspezifische somatoforme Störungen besonders in der ayurvedischen Klinik auf. „Kraftlosigkeit und Angst“ trat bei den Patienten in Indien häufiger auf als „Erschöpfung und Depression“, Im Gegensatz zu westlichen Studien. Die Vergleiche des Ernährungsindex verdeutlichten eine Unterernährung bei den Patienten mit GAD und Anpassungsstörungen, jedoch nicht bei den Patienten mit ungeklärten Störungen (Not Otherwise Specified Disorders, NOS). Diagnostische Übereinstimmung für verschiedene Störungen die zu den NSDs gezählt werden können, wurde durch diagnostische Interviews bestätigt. Diese Studie untersuchte die verschiedenen Kriterien für CFS und NT, wie bei der WHO-Studie ICD-10, der chinesischen Klassifikation für mentale Störungen (zweite Auflage) CCMD-2 und den DSM-IV Kriterien des amerikanischen psychiatrischen Verbands vorgegeben.

Die Kriterien wurden jeweils in diagnostischen Interviews mit Patienten aus vier Kliniken getestet. Die hohe Diskordanz unter den Kategorien zeigte, dass sich so Patienten mit Kernmerkmalen der NSDs nicht diagnostizieren lassen. Dies forderte und rechtfertigte den Entwurf von NSDs, basierend auf einem adäquaten, zeitgemäßen und interkulturellen Forschungsansatz.

Diese Studie der kulturellen Epidemiologie beurteilte NSDs mit Bezug zu Erfahrungen, Bedeutungen und Verhalten, notiert von Patienten aus vier Kliniken. Diverse Erklärungsansätze mit einem breiten Spektrum an biopsychosozialen Bedeutungen wurden identifiziert. Erschöpfung und Kraftlosigkeit wurden in andere somatische Beschwerden eingebettet, wie Probleme mit sozialen Beziehungen, Angst, fehlende Neugier, Traurigkeit, Gefühl von Wertlosigkeit und Probleme des Denkvermögens. Von Spannungen wurde hier allgemein berichtet. Bestimmte Ursachen (Perceived Causes - PC) wurden in allen Kliniken, andere Ursachen und nur in einzelnen Kliniken festgestellt: Biologische PCs traten hierbei häufig in der Psychiatrie, kulturelle PCs in der Dermatologie und verschiedenartige PCs waren hauptsächlich in der ayurvedischen Medizin zu finden. Soziologische PCs waren in allen Kliniken deutlich festzustellen. Kulturelle Gründe, wie Samenverlust, Masturbation, Galle, Hitze, Schicksal, der Wille von Gott und Karma waren nach den biologischen die zweitbedeutendsten Gründe. Wichtige Unterschiede bezüglich Alter und Geschlecht wurden auch miteinbezogen. Patienten mit NSDs haben einen niedrigen Stöwert, sind kaum gewalttätig, alkoholabhängig oder ernsthaft suizidal und sie streben nach einer Verbesserung ihrer eigenen sozialen und gesundheitlichen Situation. Sie sehen klinische Hilfe als eine Möglichkeit, mit ihren Sorgen, Zweifeln und Bedenken über relative normale Spannungen umzugehen. Hierfür werden sie jedoch von den überlasteten ambulanten Kliniken marginalisiert oder nicht beachtet. Erhöhte Aufmerksamkeit und einfühlsames Zuhören bilden die Basis einer kulturell feinfühligem Therapie. Patienten erwarten von den Ärzten Wertschätzung ihrer harten Arbeit trotz ihrer Erkrankung. Dies sollte sorgfältig beachtet werden, ansonsten werden die Patienten desillusioniert, verbittert, entfremdet oder schlicht unfreundlich. Die Diagnosen beruhen auf Erklärungsmodellen von Fachkräften. Einschränkungen von kategorischen Diagnosen von NSDs implizieren Zuverlässigkeit dieser dimensional Untersuchungen sowie die Bedeutung kultureller Fragen zu diesen Leiden und ihren soziokulturellen Zusammenhängen. NSDs werden daher physiologisch und psychologisch, jedoch nicht psychiatrisch und medizinisch erklärt. Leid und Invalidität der NSD-Patienten werden im kulturellen Glauben im Zusammenhang mit Lebenserfahrungen betrachtet. Mechanische Anwendung von SCID führt zu unspezifischen Diagnosen für diese Patienten. Sie haben weder medizinische noch psychiatrische Leiden, daher werden diese Patienten lediglich aufgrund der betreffenden Symptome () behandelt, was die Krankengeschichte dieser NSD Patienten durch unsachgemäße Medikation häufig unnötig verlängert.

Ausblick

Eine weitere Studie ist notwendig um die geringe Prioritaet der NSD Symptome zu erklären, obgleich die gleichen Symptome bekannte Idiome bestimmter Leiden im Zusammenhang mit dem Dhat Syndrom sind, eine berühmte kulturelle Kategorie. Kulturelle Unterschiede und soziointerpersonale Faktoren des urbanen Lebens koennten ebenso relevant sein, die Patienten koennten von Beratungen und Empfehlungen mehr profitieren als von Untersuchungen, Medikamenten, Injektionen oder gar Bluttransfusionen. Reagieren die Patienten auf die Beratung nicht positiv, muessen die Aerzte dies vorschreiben.

Ergebnisse

Diese Studie hat sowohl Forschungsfragen beantwortet, als auch neue aufgestellt. Die Ergebnisse dieser Studie zeigen die Erscheinungsformen von NSDs in bestimmten Lebenssituationen, beispielweise durch Muskelschwund und sie gewaehrleisten eine bessere Repraesentation von kultureller Psychiatrie in DSM. Das Anwenden des hier entwickelten Forschungsinstruments wird auch andere Fragen bezueglich des Gesundheitswesens loesen. Forschungsergebnisse die unter Beruecksichtigung von alternativen Diagnostikmethoden entstanden sind, haben zu dem Konzept der NSDs gefuehrt und deutlich zur Aufklaerung bei diagnostischen Konzepten beigetragen. Die kulturelle Epidemiologie traegt zu einem deutlichen Verstaendnis fuer die Prioritaeten dieser nicht so einfach zu behandelnden Patienten bei. Interdisziplinaere Forschung mit soziologischer und medizinischer Anthropologie sollten Themen wie Urbanisation, Stigma und Depression bei Patienten mit NSDs fuer Strategie und Planung miteinbeziehen. Die Entwicklung der Infrastruktur, die der schnell wachsenden Bevoelkerung nicht mehr entsprechen kann verursacht ausufernde Siedlungen, keine Staedte, welche dafür bekannt sind mentale Probleme, besonders Depression und Angst unter Frauen mit geringem Einkommen - die Hauptzielgruppe dieser Studie - zu beguinstigen. Für die Erklärung von der Zusammenhaengen und Auswirkungen von NSDs bei Patienten aus wenig oder mittel bis wenig entwickelten urbanen Regionen Indiens ist die Bezugnahme auf soziale und kulturelle Theorien essentiell.

Summary

Introduction and aims

Neurasthenia Spectrum Disorders (NSDs), previously called Clinically Significant (functional) Fatigue or Weakness (CS-FoW), refer to medically unexplained fatigue or weakness of sufficient duration prompting the sufferer to seek help due to severe distress and/or disability. These conditions include Chronic Fatigue Syndrome (CFS) and Neurasthenia (NT). Although extensively researched in the developed world, the nosology remains ambivalent and divided - emphasizing biologically based case-definitions in the West and social determinants in the East - despite essential similar clinical features cross-nationally. NSDs pose serious clinical, public health, and conceptual challenges. The clinical challenges have consequences for public health. Therefore, we aimed to study the clinical and cultural epidemiology of NSDs in an urban general hospital in Pune, India.

Significance of the problem and purpose of interest

Clinical challenges include poor understanding about etiology, varied and vague clinical presentations, pluralistic help seeking, chronic course, and poor outcome with patient dissatisfaction and provider burnout. They have a high economic cost from disability and health service use. Significant cross-cultural variations and questions about the relationship of NSDs with depression and somatization motivated seminal developments in the field of cross-cultural psychiatric theory and research. Serious debates about the nature of NSDs, their relationship with depression, and the role of social and cultural determinants in their origin, persistence, and transformation contributed to the growth of the field. Social theory may associate NSDs with socio-cultural predicaments rather than clinical disorders. Rapid growth, urbanization, preoccupation with material success and commerce, and expanding roles of women are supposed to be crucial factors contextualizing mismatch between ambition and social capacity leading to suffering ex-

pressed through contemporary cultural idioms. Although the concept of Dhat syndrome is rooted in Indian cultural concepts and symptoms include features of NSDs, they are not routinely diagnosed or studied in India.

Objectives

This project was conceived with reference to this background of global scientific, cross-cultural, and local contexts and features of cultural disorders of fatigue and weakness in India. It was one of several cross-national studies of fatiguing disorders taken up in Asia and North America to validate and measure the epidemiological burden, assess biomedical and psychiatric accompaniments, and compare existing formulations of NSDs. The role of cultural epidemiology in explaining these disorders and guiding their management and prevention in an Indian urban setting was to be assessed by eliciting patients' illness experience, meanings, and experiences and expectations of help seeking.

Phase 1

Prevalence study

We used a multi-methods approach for this integrative clinic-based set of cross-sectional studies. In phase 1, we studied the prevalence of NSD core criteria from four distinct outpatient specialty clinics of a large urban general hospital. This hospital was affiliated with a teaching college providing primary and tertiary services. Clinics of Psychiatry, Medicine, Dermatology and Ayurved offered distinct cultural approaches to clinical care, facilitating assessment of NSDs in clinical subcultures. We found an overall prevalence rate of 5% among 1,874 consecutive patients, but higher prevalence rates in women and among Dermatology clinic patients on logistic regression. Development of a brief semi-structured interview assessment tool to screen patients for clinically significant, medically unexplained, and disabling fatigue or weakness is a significant contribution to the field.

Phase 2

Biomedical markers

In phase 2, using the same tool, we selected patients for in-depth study from the same clinics. We began with a case-control study to identify biomedical markers, and found comparable hemoglobin and body mass index (BMI) among patients and controls. This was consistent with clinicians' judgment about these conditions being medically unexplained. Anthropometric

measurements, however, showed a significant deficiency of estimated muscle mass among patients compared with controls. Control subjects group, though rather small, was carefully chosen from among Psychiatry clinic patients who fulfilled other inclusion criteria, but did not have NSD, thus having the same comorbid disorders as NSD.

Psychiatric morbidity

We intended to clarify psychiatric morbidity among NSD patients. Diagnostic interviews for psychiatric disorders used SCID-I/P (Structured Clinical Interview for DSM-IV-TR axis I Disorders-patient edition) (research version). Anxiety disorders were most frequent, followed by somatoform and depressive disorders. Highest rates of depression were found in the Psychiatry clinic; Generalized Anxiety Disorder (GAD) and adjustment disorders were most frequent in the Medicine clinic; non-specific anxiety in Dermatology and non-specific somatoform disorders in Ayurved clinic. A profile of 'weakness with anxiety' rather than 'fatigue with depression' was a notable feature of these Indian patients, in contrast with Western studies. Comparisons of nutritional index based on quartiles of hemoglobin, BMI, and CAMA suggested possible malnutrition among patients with GAD and Adjustment Disorders, but not in those with Not Otherwise Specified (NOS) disorders.

Diagnostic concordance

Diagnostic concordance for various disorders that may be regarded as NSDs was assessed with diagnostic interviews for these various formulations. The study examined criteria for CFS; and for NT as diagnosed by WHO's ICD-10, the Chinese Classification of Mental Disorders, (second edition) CCMD-2, and the American Psychiatric Association's DSM-IV draft criteria. Criteria for each were assessed in a diagnostic interview administered to patients from the four clinics. High discordance among the categories showed that they could not reliably diagnose patients with core features of NSDs. This prompted and justified the conceptualization of NSDs based on an adequate, contemporary and cross-culturally valid screening tool.

Cultural epidemiology

Cultural epidemiological study evaluated NSDs with reference to experience, meaning and behavior reported by patients in the four clinics. Diverse explanatory models with a full range of biopsychosociocultural meanings were identified. Fatigue and weakness were embedded in other somatic complaints, social relationship problems, anxiety, lack of enthusiasm, sadness, worthlessness, and problems with thinking. Tensions were very com-

monly reported. Some perceived causes (PC) were common across clinics, and others were distinctive for specific clinics. Biological PCs were most frequent in Medicine, psychological PCs in Psychiatry, cultural PCs in Dermatology, and a diverse mix of PCs in Ayurved were the prominent findings. Social PCs were pervasive across clinics. Cultural causes, such as semen loss, masturbation, bile, heat, fate, will of God and karma, though least prominent, were second highest in frequency after biological ones. Significant age and gender differences were also noted.

Discussion

Patients with NSDs are rarely violent, alcohol dependent, or urgently suicidal. They generally strive for betterment of their own social and health conditions. They regard clinical help as just one option for help with their worries, doubts and concerns about relatively normative stresses. Therefore, they get marginalized or even dismissed from the busy outpatient clinics. To help them, closer attention and empathic listening is needed as the crux of culturally sensitive counseling. Patients expected clinicians to appreciate their hard work despite weakness. They need to be attended to, lest they become bitter, disillusioned, alienated, or hostile.

Diagnoses are explanatory models of professionals. Limitations of categorical diagnoses in NSDs imply more reliance on dimensional measurements and need for cultural inquiry of the distress and its sociocultural contexts. NSDs are thus explained physiologically and psychologically, though not psychiatrically and medically.

Distress and disability of NSD-patients are constructed by cultural beliefs in the context of patients' lived experiences. Mechanical application of SCID generates non-specific diagnoses for these patients. They do not have medical or psychiatric disorders - so treating their 'referred symptoms' (like 'referred pain' in general medicine suggesting pathology at a site other than its true source) with indiscriminate use of medication may expose NSD patients to prolonged illness career.

Future directions

Further study is needed to explain why the symptoms of NSDs are a relatively low professional priority. Cultural values and social-interpersonal features of urban life are likely to be relevant, and patients are likely to benefit from counseling and advice, rather than insisting on scans, medicines, or even blood transfusions. If patients have no positive regard for advice and counseling, doctors may rationalize prescribing over counseling.

The study has both answered our research questions and raised new ones.

Prevalence estimation in other settings, investigating muscle deficiency, and proper representation of cultural psychiatry in DSM may be guided by our findings. Screening with the instrument developed in the study may clarify public health interests. Findings from consideration of concordance of alternative diagnostic formulations, leading to our concept of NSDs contributed to clarification of diagnostic concepts. The cultural epidemiology contributes to a clearer indication of priorities for difficult-to-treat patients. Interdisciplinary work with social and medical anthropologists needs to consider themes of urbanization, stigma, and depression in patients with NSDs for policy and planning. Development of infrastructure failing to keep pace with the population growth creates sprawling populations, not cities, which are known to enhance vulnerability for mental disorders, especially depression and anxiety among low income women, who are the majority of our study sample. Consideration of social and cultural theory is needed to explain the context and impact of NSDs in the lower and lower-middle class urban Indian patients represented by our sample.

List of Tables

Table 1.1: Functional somatic syndromes by specialty (reproduced with permission from 'Functional somatic syndromes: one or many?' Wessely et al (1999), Lancet, 354: 936-939)	4
Table 2.1: Prevalence of clinically significant functional fatigue or weakness (CS-FoW or NSD-cc) in four clinics (%)	30
Table 2.2: Sexwise prevalence of patients screened and identified with clinically significant functional fatigue or weakness (NSD-cc) in four clinics (%)	31
Table 2.3: Sexwise distribution of mean and median age of patients with clinically significant fatigue or weakness (NSD-cc) in four outpatient clinics	32
Table 2.4: Comparison of CS-FoW (NSD-cc) in four clinics, adjusted analysis.	33
Table 3.1: Sexwise distribution of Hemoglobin levels (g/dL), BMI & CAMA (sq cm) for patients and controls	47
Table 3.2: Sexwise distribution of Mean Difference in Hemoglobin levels (gm%), BMI & CAMA (sq cm) in NSD (CS-FAW) study patients and controls	48
Table 3.3: Nutritional status of NSD patients: Comparison of mean index of nutrition of patients with and without psychiatric disorders	49
Table 3.4: Psychiatric diagnoses of patients with NSD (CS-FAW) disorders (%)	51
Table 4.1: NSD core criteria patients diagnosed with four categories (%) showing extent of observed agreement	66
Table 4.2: Agreement among alternative diagnostic categories for NSDs (Pairwise comparisons)	67

Table 4.3: Four-way concordance of NSD criteria sets	68
Table 4.4: Kappa statistic for four-way concordance of NSD criteria sets	68
Table 4.5: Attrition of patients during the diagnoses of NSDs from the first descriptive clause to final diagnosis	69
Table 5.1: Categories of distress (individual and groups) reported by NSD study patients (%)	86
Table 5.2: Clinic-specific categories of distress reported by NSD study patients	88
Table 5.3: Perceived cause categories reported by NSD study patients (%)	90
Table 5.4: Prominence of clinic-specific perceived causes reported by NSD study patients	92
Table 5.5: Prominence of clinic-specific perceived causes reduced to bio-psycho-social-cultural supergroups for NSD study patients	93
Table 5.6: Prior help seeking reported by NSD study patients (%)	94

List of Figures

Figure 1: Waiting hall of Medicine clinic - appeal of biomedicine	xxv
Figure 2: Clinical Assessment in Medicine clinic	xxv
Figure 3: Assessment in Psychiatry clinic - 'making meaning' of suffering	xxvi
Figure 4: Ayurved clinic - appeal of non-invasive healing of chronic conditions	xxvi
Figure 5: Adolescent youth in Dermatology clinic waiting hall	xxvi
Figure 6 Methods and Sample- Methods in Process:	14
Figure 7: Abstractions of 'etic' and 'emic'	15
Figure 8: Distribution of Mean SCL-90 (enhanced) Subscale Scores	52

List of Abbreviations

BMI	Body Mass Index
CAMA	Corrected Arm Muscle Area
CCMD-2	Chinese Classification of Mental Disorders - 2nd edition
CFS	Chronic Fatigue Syndrome
df	degrees of freedom
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, 4th edition
EMIC	Explanatory Model Interview Catalog
F	Female
Hb	Hemoglobin
HS	Help Seeking
ICD-10	International Classification of Diseases and health conditions - 10th revision
KW	Kruskal-Wallis
M	Male
MW	Mann-Whitney
NSD	Neurasthenia Spectrum Disorder
NSD-cc	Neurasthenia Spectrum Disorder-core criteria
NT	Neurasthenia
PC	Perceived Cause
PD	Patterns of Distress
SCID-I/P	Structured Clinical Interview for DSM-IV, axis one, patient version

The Study Clinics



Figure 1: Waiting hall of Medicine clinic - appeal of biomedicine



Figure 2: Clinical Assessment in Medicine clinic



Figure 3: Assessment in Psychiatry clinic - 'making meaning' of suffering



Figure 4: Ayurved clinic - appeal of non-invasive healing of chronic conditions



Figure 5: Adolescent youth in Dermatology clinic waiting hall

1. Introduction and Methods

Neurasthenia Spectrum Disorders: Clinical Cultural Epidemiology in Pune, India

1.1 Features and Importance of Neurasthenia Spectrum Disorders (NSDs)

Fatigue and weakness are universal experience in daily life. When persistent or severe, they constitute symptoms generally regarded as secondary to medical problems or depression and anxiety. However, they become primary symptoms when medically unexplained. Medically Unexplained Symptoms (MUS) of fatigue and weakness are common in primary care and Medicine, Psychiatry, or other specialty clinics. When these persistent and unexplained symptoms are also clinically significant, i.e. causing social or work impairment and subjective distress prompting help seeking, they constitute disorders in the phenomenological diagnostic classifications, thus being a focus of clinical interest. If not immediately, these symptoms can later be discovered to be secondary to biomedical pathology such as cancer or chronic infectious disease; hence the quarantine duration clause before diagnosing a primary fatiguing disorder. Question of how they relate to other medical or mental disorders becomes pertinent. They present a serious challenge for clinical practice and health resource allocation, because it is often unclear how much of a diagnostic evaluation is enough, and treatment itself requires better guidance.

Many syndromes with overlapping features have been described in different parts of the world with prominent features of medically unexplained and disabling fatigue or weakness of sufficient duration (so as to rule out potential medical problem), causing distress, and prompting the sufferer to seek help. Prominent examples include Chronic Fatigue Syndrome (CFS) as defined by Centres for Disease Control and Prevention (CDC) in North America (1) and Neurasthenia (NT) as described in the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision - ICD-10, second edition (ICD-10) (2). NT is also described in the Chinese Classification of Mental Disorders (CCMD) (3), and NT was proposed in the draft for Diagnostic and Statistical Manual for mental disorders, fourth edition (DSM-IV) (4), in addition to Fibromyalgia (FM) or Myalgic Encephalomyelitis (ME) as described in UK, and so on. Collectively, the various formulations of this common clinical problem may be characterized as Neurasthenia Spectrum Disorders (NSDs) (5) based on essential core features of fatiguing disorders (6).

CFS has been studied to measure its considerable economic impact on the sufferers, their families, and the national productivity. Estimated annual total lost productivity was \$9.1 billion for the US, translated to \$20,000 per year for a patient, and about one half of household and labour productivity per

average person with CFS in 2004 (7). The costs reported by insurance industry in Canada were approximately \$100 million annually for CFS, FM, and repetitive strain injury (8). Although not included among major psychotic (schizophrenia) or mood disorders (depression and bipolar disorders), NSDs represent a substantial burden of illness that merits attention in clinical and community settings. Although recognized conditions in clinical practice in Western Europe, North America and Australia, they are a neglected component of mental health burden in low- and middle-income countries.

1.2 Scope and interest of the literature

There is extensive literature on NSDs. Similar to their various names and case-definitions across the world, there are various disparate models and conceptualizations of NSDs in different fields of Medicine, Psychiatry, Sociology, and Anthropology.

Initially biomedical models were predominant in the West, and social models in the East. But currently both sociocultural and biomedical models have elaborated theory and research extensively, often debating and apparently adversarial. This enriching process, however, seems to be instrumental in the new bridges between medical and psychosocial, and cultural and biological. Though far from complete, Cartesian dualism again seems to be giving way to monism, albeit a highly differentiated, sophisticated and intricate one.

A broad range of syndromes found exclusively or predominantly in specific cultures were earlier regarded as culture-bound syndromes. Along with others found in the different parts of the world (9,10), CFS is also argued to be a culture-bound syndrome of North America (11). The earlier concept of culture-bound syndromes later evolved to culture-specific disorders. It is necessary to know the progress of culture-bound syndromes from 'exotic' disorders of the 'other' culture, to culture specific disorders (12). Current understanding of culture and somatic syndromes points toward the multidimensional relationship of somatic distress with body, mind, society, and culture (13). Functional somatic syndromes (FSS) (see Table 1.1) and MUS are often considered as overarching categories (14,15), although Wessely et al (16) concluded that dimensional classification would be preferable considering the outweighing similarities between the disease and illness factors among them. In DSM-IV the diagnoses typically used for NSDs are somatoform disorders, especially undifferentiated somatoform disorder.

Table 1.1: Functional somatic syndromes by specialty (reproduced with permission from ‘Functional somatic syndromes: one or many?’ Wessely et al (1999), Lancet, 354: 936-939)

Gastroenterology	Irritable bowel syndrome, non-ulcer dyspepsia
Gynecology	Premenstrual syndrome, chronic pelvic pain
Rheumatology	Fibromyalgia
Cardiology	Atypical or non-cardiac chest pain
Respiratory medicine	Hyperventilation syndrome
Infectious diseases	Chronic (post-viral) fatigue syndrome
Neurology	Tension headache
Dentistry	Temporomandibular joint dysfunction, atypical facial pain
Ear, nose, and throat	Globus syndrome
Allergy	Multiple chemical sensitivity

In addition to these clinical and cultural conceptualizations, broader sociological models (17) discuss marginalization and resistive attempts by CFS sufferer, while sociosomatic models (18) recapitulate cultural history and social suffering, for example to contextualize Shenjing Shuairuo (earlier considered synonym for NT) in China. The cognitive behavioral (CBT) model of MUS deals with the interconnections and extrapolations of recent evidences in the field of psycho-neuro-immuno-endocrinology in the context of stress and the bridges between the body and the mind. In this influential theoretical and empirical review of MUS with particular examples of CFS and Irritable Bowel Syndrome (IBS), Deary et al (19) examine the theoretical and treatment evidence according to principles of CBT. The autopoietic (self-perpetuating) interactions among various factors explain the chain of causality for maintenance of symptoms. The background persistence of lifelong tendency to experience negative affects identified as ‘neuroticism’ (20,21) plays a key-role in attention, detection, elaboration, and attribution of symptoms, and perseverative cognition that are thought to be linked inextricably. Perseverative cognition (22) is regarded as essential in mediating between the stressful event and prolonged physiological activation necessary to transform the effects of stress into the cardiovascular, neuroendocrine, or immunological consequences.

1.3 Clinical interests

Diagnoses are explanatory models of the professionals (23,24), which are used to understand and predict the course of a condition, and to guide appropriate interventions. Diagnoses of NSDs however, do not adequately explain or guide treatment. Quality of life suffers. Dissatisfaction with treatment leads patients to keep seeking help from various sources contributing a burden on health care systems that have difficulty providing specific treatment for a vague problem (25). Stigma is an important component of patients' suffering, both within health systems and social networks of family, work, and community. These conditions are associated with a high degree of psychiatric morbidity (26).

Clinical challenges of NSDs are widely recognized. The existence and magnitude of symptoms are acknowledged in the literature only intermittently. Many possible syndromes to diagnose a patient with, but no guideline for management is the clinician's dilemma. NICE guidelines advise enhancing collaboration with patients without explicit guidelines. Causes remain unknown or hotly debated, clinical features typically non-specific, vague, and multisystem, no specific diagnostic test, chronic unsatisfactory clinical course, poor patient satisfaction, and continued disability without a visible handicap may summarize the situation.

A study based on 314,219,000 office visits in National Ambulatory Medical Care Survey (NAMCS) in the US spanning over two years charted the 'reasons for visit' and the 'diagnoses'. Symptoms of tiredness and general weakness were at 12th and 27th ranks on reasons for visits to primary care office, apart from prenatal examination (27). But on diagnoses list there is no category that refers primarily to them. In the absence of an identified biomedical cause, diagnoses frequently include neurotic disorders, functional digestive disorders, unspecified arthropathies, and so on. Most medicine text books, like the one quoted above, emphasize fatigue as a poorly defined complaint, rate its prevalence at 25%, and regard fatigue and weakness largely as secondary symptoms of depression, somatization, or anxiety (27). On searching for NAMCS 2005, there is no mention of tiredness or general weakness in the list of top 20 reasons for visit or diagnoses (28). Similarly prioritized medical complaints e.g., 'fever of unknown origin', (although temporarily unexplained) get clarified soon, with usually favorable outcome. But NSDs linger on for years, implying prolonged pluralistic health care burden and burnt-out clinician in the end.

The very nature of NSDs, whether purely medical, purely psychiatric, or psychosomatic is unclear (29) and hotly contested (30). Confusing and plural-

istic professional nosology points to the ambivalence of professional diagnostic systems toward them. Patients, too, have difficulty in grappling with their illness and explaining it (31). In addition to the usual pluralistic help seeking, some patients with NSDs stop consulting any doctor similar to IBS patients. Ironically, reduction in consulting behavior is considered a positive indicator of outcome (32). For most other medical and psychiatric problems, this would be regarded as underutilization of care.

1.4 Public health interests

Limited clinical understanding of a chronic condition has dire public health implications. Loss of productivity for patients and for nations, repetitive and chronic demands on health systems, poor patient satisfaction, poor interdisciplinary communication among doctors, and their reluctance to see these patients are typical problems enhanced by the clinical challenges.

Barriers to care are multiple (33) and located in all three - patients, systems, and the NSDs. Burden of disease computations are incomplete and extremely difficult due to the undefined and hidden burden of NSDs. It is also believed that the burden is more when the sufferer has to face the disability each moment, rather than a catastrophic non-progressive event (Don de Savigny, 2011; Personal communication). Health care delivery is also challenged due to poor patient-acceptance of mental health referral or intervention that is necessary considering high psychiatric comorbidity of NSDs. Pluralistic non-medical and medical help seeking are a matter of concern that needs to be studied. Jones and colleagues (34) reported from US that 77% of NSD patients used complementary and alternative medicine (CAM) independent of rural-urban, age, or income characteristics; and women were significantly more in CAM use. Interestingly, higher the education, more frequent was the CAM use. Users' report of having used and discussed their CAM use with their physician depended on the perceived severity of NSD implying the importance of illness characteristics of perceived seriousness.

Burden of care is borne by health systems, including public and private sectors, and by patients, who are willing to spend disproportionate amounts in search for care that seems elusive. Patients' preferences are based on cost, convenience, and prospects for desired outcome (25).

1.5 Historical considerations

Since its inception in 1869 by Beard, neurasthenia (NT) has undergone several transformations in its concept, name, and geographical-cultural locations including various neurological and psychiatric diagnostic systems.

There are many pioneers who suffered this malady. Interestingly, many

nobilities include Dr George Beard himself (35), which is believed to have contributed to the creation of NT, in addition to Sigmund Freud and William James (36). The assertion by Beard about its 'medical' origin is said to have allowed the condition to gain popularity and acceptance, so much as to be regarded as a status symbol, as argued by Feinstein and Durkheim, both quoted by Kleinman (36). Notably, in retrospect, Sir Charles Darwin was also thought to have suffered from CFS-ME (37) or Neurasthenia, as quoted in Pasnau (38). Although the diagnoses considered for his chronic disabling suffering may remain mysterious, his attitude toward the illness was exemplary. He wrote: *"Even ill-health, though it has annihilated several years of my life, has saved me from the distractions of society and amusement."*

Taylor (39) examined the annual reports of Queen Square Hospital, London, from 1870 to 1947 to discuss rise and fall of neurasthenia in UK, which was later supplanted by psychological diagnoses. Similarly, history of NT has been traced in Americas and China (18). The story unfolded from Epstein Barr (40) to xenotropic murine leukemia virus-related virus (XMRV) (41,42) and from immune dysfunction to treatment with monoclonal antibody (43) all leading to a stalemate (44). Psychiatric diagnostic systems have been uncertain and ambivalent (5) but inciting the wrath of patients all the same. Whereas the debate is still raging high, the American College of Rheumatology have proposed change of criteria to diagnose fibromyalgia (45) without having to examine tender points in US and Canada, which has come under criticism from patients and other professional organizations.

1.6 Cultural psychiatry and NSDs

Cross-cultural variations add to the complexity of the issue. Seminal research in China of Kleinman in the 1980's argued that neurasthenia may be regarded as a visible feature of underlying but hidden depression (46). This point has been disputed and the question of whether NT and depression are distinct has been contested (47). The importance of NT in Asian cultures was also discussed (48), though largely restricted to East Asia. Cross-cultural comparisons among patients of NSD in China, North America, and UK are described (49).

The whole topic of depression, neurasthenia and somatization in their complex interaction has been crucial in theory and research in the field of cross-cultural psychiatry. (46) Ontological differences or deficits in the concepts of disease and illness across various medicinal systems in different cultures, and epistemological differences in the origins and orientations of medicine in Europe, and non-western sociocentric cultures like India or China have been eruditely addressed (51). In his classical argument Fabrega asserts

that the concept of somatization is a cultural and historical product of Western medicine. However, Western medicine is the dominant, pervasive, and contemporary medicinal system across the world now, including India, thus bringing somatization and all the contentious issues with it into the cultures that originally did not have the developed concept of body-mind dualism. Somatization needs processes and systems for authentication and verification of the degree of disease process being explained in illness manifestations. Adequate judgment of the necessary and sufficient biological basis to explain one's manifest complaints vis-à-vis the psychological and social distress is the most crucial yet dubious feature of somatization. It has been instrumental in propelling the research and development in various fields of medicine, including psychosomatic medicine and cross cultural psychiatry. Kleinman warns of the category fallacy, where one can make a serious blunder by importing a category of disorder that was foreign to the host culture (52). It was only logical for us to face the criticism initially that NSDs do not exist in India, considering the fact that they are not used in clinical practice, nor researched systematically.

Semen loss due to any orgasmic activity was 'dangerous' according to Asian cultures, while in Judeo-Christian cultures it was regarded as 'sinful' (53); no wonder if we find 'fear of danger' associated with weakness, and 'depression over sins' associated with fatigue! It also shows how culture and religion are deep-rooted in human beings; they continue to influence our illnesses and responses to them, despite outwardly unified cultures.

Health systems, and especially mental health systems, have a responsibility to provide health care for chronic conditions for which curative treatment is lacking. NSDs represent the prime prototype of this demand. A scholarly discussion of the social course of illness similar to its clinical course, details the dialectical processes of marginalization and individual's resistive attempts in the context of CFS (or NSDs) in increasing urbanization (17). Novel attempts for collaboration are done among patients, primary care physicians, and professionals from various academic backgrounds (54). Their indication of success and utility also indicate value of cross cultural research in NSDs for mutual trust and empathy.

1.7 Situation in India

Recently a population based (55) prevalence study of chronic fatigue has been reported from India. The only clinic-based study of NSDs (56) forms a part of this thesis. Until then, there have been few studies on NSDs in India apart from case reports or historical perspectives on Dhat syndrome (57), reasoning about the status of Dhat syndrome as a culture-specific syndrome

described in South Asia (58). Although Malhotra and Wig expressed the optimism in 1975 that dhat syndrome will subside in future with increasing awareness and literacy (59), researchers in 2005 demonstrated that it was still very much there in South India (58) and Pakistan (60). Moreover, its current relabeling into non-specific categories, or as FSS or MUS offers no help in understanding or management.

No systematic research existed even about the clinical aspects of NSDs. Public health issues, such as burden of disease and control strategies were not addressed so far, despite pluralistic help seeking, high and chronic disability and high stigma related to the condition, and non-chalant doctors and sufferers with little nuisance value. Also, there are no consensus guidelines. Considering the significance of the topic for clinical and cultural psychiatry research was warranted to understand and improve the management of NSDs in clinics and communities in India and elsewhere. Better understanding of social and cultural contexts that generate these disorders would help serve these needs. Research related to NSDs in ethnic minorities in UK (61) that is locally valid and globally useful, should be pertinent for Indian situation that is also multicultural and beset with inequalities.

Mental health challenges are enhanced due to urbanization (62). Rapid urbanization poses special challenges in physical, social and interpersonal spheres, especially depression and anxiety among low income women (63). Contextual urban cultural factors are predicted to assume a preminent if not crucial role (64). The challenging rate of development of urbanization fueled by industrialization, privatization, liberalization, and globalization are affecting social and cultural milieu in India, including health sector (65). Ambition is fuelled in promising times, but lack of matching social abilities has been argued to explain cultural genesis of NSDs (66). Fast life style, uncertainty, instability, isolation, alienation, objectification and commodification create contexts for enhanced vulnerability. The changing ethos of Indian family structure and roles has reduced traditional support systems, which used to be a crucial resource for psychiatric and psychosomatic conditions.

Ayurved - one of the most ancient medicinal systems originated from India (51); therefore, culturally distinctive ways of defining various health conditions and illnesses is expected. This includes disorders of fatigue and weakness; though there was no concept of 'medically unexplained', or of somatization. Dhat (a Hindi word for semen) syndrome was classically described as a culture-bound symptom complex (59) which can be regarded as a local or regional cultural formulation of NSDs. It is characterized not only by the clinical picture of severe anxiety and preoccupation over semen loss leading to progressive physical and sexual weakness or eventual impotence,

intellectual, and emotional deterioration, but by *patient's* attribution of the symptoms to this semen loss. Seminal fluid is considered an elixir of life both in the physical and in the mystical sense. Its preservation was believed to be virtuous and promoting health, longevity, and even mystical powers. It is not surprising to see that this syndrome being rooted in cultural physiological concepts, would logically lead patients to seek more herbal treatment, traditional help, or even magical cures, or the so-called 'sex and venereal disease clinics' - selling herbal medicines under new or no names.

With the advent of Western biomedicine, combined specialty of dermatology and venereology caters to skin problems as well as sex-related concerns or maladies. Because of highly conservative and traditional values in recent past, having to see a dermatologist for sexual concern was a stigma. Also the perception of 'extra heat in the body' based on passing warmer or dark urine, or white discharge from urine are culturally derived concerns. Consultants trained in Western biomedicine, at a loss to interpret them, may not entertain such complaints or just advise a referral to Psychiatry, which is rarely acceptable to patients. Due to limited or no privacy in Dermatology clinic, patients are reluctant to share their intimate concerns, feeling compelled to seek help from the often exploitative and so-called 'sex-VD specialists' without authentic credentials or identity.

Visiting Ayurved clinic for weakness is not an obvious stigma - though similar concerns could be discussed with relative impunity. Patients with weakness as a symptom rather than as a cause would see Medicine clinic doctors in the hope of replenishing the presumed deficiency in the body. Help seeking in psychiatry generally results from referral, rather than own choice. Prominent presence of psychotic patients and practice of electroconvulsive treatment (popularly feared as 'shock treatment') have stigmatized this clinic. Thus patients could see Medicine or Ayurved clinics without fear of blame, but the other two only reluctantly.

Due to the cultural diversity of India, cultural physiological origin of the dominant dhat syndrome, the advent of biomedicine, and availability of various options for care, especially when the expected relief is not forthcoming, pluralistic medical and non-medical help seeking appears inevitable.

1.8 Research needs

Scientific audiences are accustomed to reasoned dialogs on established findings; but the field of NSDs is beset with uncertainties and inconsistencies (67) and the results are evaluated skeptically (68).

Existence of NSDs in India needed to be validated. None of the overlapping syndromes or case definitions is used routinely in Indian setting. NSDs

cannot be diagnosed by a laboratory test, and the question of underlying medical basis is more relevant in Indian setting due to the possibility of undiagnosed infectious diseases and malnutrition. High psychiatric morbidity, especially depression with fatigue, was reported from the North American, European, and Australian settings where NSDs are extensively researched. Patients with similar presenting complaints of unexplained fatigue or weakness were known to be visiting various specialty clinics in the general hospital study setting.

Research on clinical and cultural aspects of NSDs was needed in the context of urbanization and epidemiological health transition, as the NSDs are believed to be a product of such environs. We need clinical knowledge as well as community perceptions to be able to control the disorder under consideration (69). For NSDs in India we did not have either.

Therefore, the research questions were: Are NSDs a valid entity in Indian clinical settings? What is their magnitude? What are the determinants of prevalence? What are the biomedical investigations routinely done in the setting? Do they distinguish NSD patients from non-patients? Are nutritional assessments done? What are the common psychiatric comorbidities - categorical and dimensional - of patients with NSD? Are there differences among these patterns across clinics commonly visited by these patients? Can the biomedical, nutritional, and psychiatric assessments potentially guide the public health strategy to control or prevent NSDs in the watershed of urbanization? Would a better understanding of patients' views of the condition and expectations of treatment contribute to more effective services and treatment? Dhat syndrome was regarded a local cultural formulation of NSDs; would it be a determinant in patients' illness experience, meanings, or behaviors?

About the same time, 'Pacific Rim Collaborators' were mulling over disorders of unexplained fatigue or weakness. Considering the open questions in the field of cross-cultural psychiatry especially regarding NSDs and their comorbidity, Centre for Psychobiology of Ethnicity, UCLA, organized a series of studies. This multi-center study included Taiwan, China, Canada, USA, Hong Kong, and Japan apart from India. Considering the comparative work done in this field regarding resident and migrated Chinese populations and in North America and UK as mentioned above, a gap was left in the form of lacking studies from India, where Dhat Syndrome is endemic. With inclusion of India in this multi-national research project, this gap was filled.

1.9 Objectives

Broad aims: This thesis addressed key research issues for NSDs including their epidemiological burden, nosology, patients' explanatory models, and the role of cultural epidemiology to guide the treatment and control of NSDs in India. We intended to clarify the relationship of NSDs and depression and to study and discuss the clinical and cultural dimensions of epidemiology of NSDs and clarify their biopsychosocial and cultural features and determinants.

Specific aims:

- To assess prevalence of NSD core criteria in four outpatient clinics of Psychiatry, Medicine, Dermatology, and Ayurved in an urban general hospital in Pune, India.
- To assess biomedical correlates of NSDs routinely examined in the study clinics, in addition to nutritional status reflected in muscle mass estimation.
- To assess psychiatric morbidity among patients with NSD core criteria.
- To assess diagnostic concordance among CFS (CDC) and Neurasthenia (NT) according to ICD-10, CCMD-2, and DSM-IV Draft criteria sets.
- To study patients' experience, meaning, and behavior - cultural epidemiology of patients with NSD core criteria.
- To clarify the relationship between NSDs and depression.

1.10 Methods

1.10.1 Setting

Pune is a metropolis in Western India about 160 km from Mumbai with a population of about 5.5 million, and Marathi is the local vernacular language. Pune has been the cultural center of the State, and many freedom-fighters hailed from this city. The city is currently a center for information technology, industry, and education, attracting students and workers from many parts of India and abroad. Urbanization, however, has led to widespread concerns about the deterioration of the city due to rapid growth, cultural changes from the pressure of immigration, pollution, and the threat of terrorism.

The study was conducted at the Sassoon hospital, Pune, which offers primary care and referral services. It is a government hospital affiliated with BJ Medical College, the oldest in Pune. Subsidized clinical services include 1,200 inpatient beds and outpatient services for the urban agglomeration and adjacent rural areas. Most patients are from low-income groups, and the hospital serves a mix of Hindus (the majority), Muslims and Buddhists.

1.10.2 The study clinics

The four outpatient study clinics, as described, are Psychiatry, Medicine, Dermatology, and Ayurved. Care at the Ayurved clinic is based on the traditional Hindu system of medicine based on theories attributing strength, vigor, as well as fatigue and weakness to a humoral balance, with reference to cultural physiological concepts of semen (*dhatu*), material substance (*prakriti*), environmental conditions, and so on. It is often valued by patients for its holistic approach, non-invasive methods, and expectations of few side effects. The Dermatology clinic treats patients with dermatological problems and sexually transmitted diseases, which may be stigmatized. The Medicine clinic operates according to the standards of contemporary Western biomedicine, and the Psychiatry clinic largely treats psychotic patients and those with mood disorders according to standard international guidelines. Thus, they represent distinct approaches to health, distress, or disorder, embodying different cultural values and the ways of understanding body and mind. In this way, choosing study site facilitated direct comparison of four subcultures under the umbrella of single urban general hospital of Indian culture.

1.10.3 Study design

Considering the biopsychosocial and cultural scope of the topic, integrative quantitative and qualitative methods were used. Description of study methods appears in each paper in the following chapters. Overview of methods is presented in chapter four describing the diagnostic concordance. Therefore, only a cogent description of relevant methods is presented here in addition to the relevance of study design and the approach of cultural epidemiology briefly.

1.10.3.1 Relevance of the Study Design

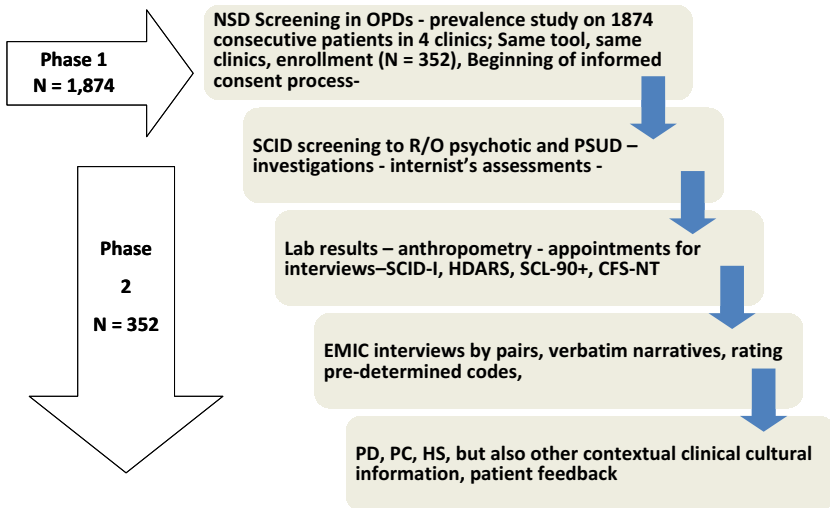
Neurasthenia is an enigma since over 150 years. Depression, medically unexplained somatic symptoms (MUS), sophisticated biomedical advances in the field of MUS, and often incompletely discerned role of culture in the psychosomatic tradition (70) have been the motivating factors behind the development of the field of cultural psychiatry as a whole. While laying the foundations of “new cross-cultural psychiatry”, Kleinman (52) laid down essential prerequisites for a cross-cultural inquiry warning about the danger of ‘category fallacy’. He advised not to choose a universal category, but rather to look at the neglected and usually unseen illness experiences, to focus on cultural influence on the normative rather than deviant emotions and behavior, to conduct systematic analysis and comparison of illness-categories be-

fore a cultural study was undertaken, and to use a proper comparative tool sensitive to indigenous narratives rather than using a universal tool, which is almost sure to find only the universal, thus validating the condition across cultures - that, too, not being a trivial concern.

Our choice of multicultural clinical setting, choice of the condition as a subject of study, and the framework and methods used are in line with the norms stipulated above.

Following diagram (Figure 6) illustrates the framework of methods used in the two phases of this study:

Figure 6: Methods and Sample- Methods in Process:



Using multi-methods approach we have outlined the clinical cultural epidemiology. We conducted a survey of statistically sufficient sample of consecutive patients for assessing prevalence, addressing the issues of classical epidemiology. To address the issues of clinical epidemiology, a case-control design was used to study routinely tested biomedical markers, while diagnostic interviews were used for psychiatric morbidity and clinician-rated and self-rated instruments (Hamilton and SCL-90) were used for measuring dimensional psychopathology. For the nosological inquiry, diagnostic interviews for CFS and NT (ICD-10, CCMD-2, and DSM-IV draft) with Cochran’s Q and kappa statistics for analyses were used for assessing agreement among existing formulations of NSD. EMIC interviews with quantitative and qualita-

tive methods for describing the experience, meaning and behavior elicited the explanatory models required for studying the cultural epidemiology. Mean prominence of Patterns of Distress (PDs) and Perceived Causes (PCs), and frequencies of help-seeking options facilitated comparisons of experience, meaning, and behavior across clinics.

Following schematic diagram (Figure 7) illustrates the processes of this study employing psychiatric and cultural epidemiological research paradigms and concepts:

Figure 7: Abstractions of ‘etic’ and ‘emic’

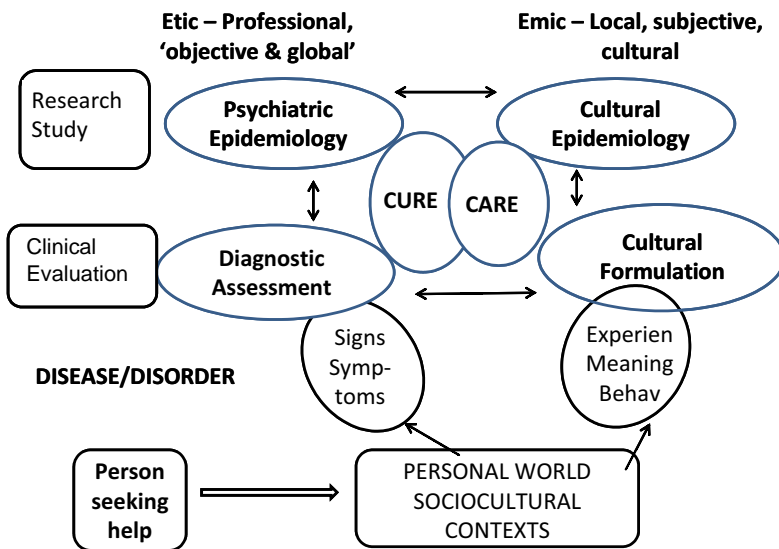


Figure 7 indicates the complementary relationship between the fields of psychiatric and cultural epidemiology essential to understand the phenomena from the personal world of the patient in sociocultural contexts, which are pervasive and inclusive of all fields and activities of fields of medicine. (Adapted from Weiss MG, Cultural epidemiology: an introduction and overview (71) with permission)

Akin to the approach of professional epidemiological systems that evolve group averages through abstractions from the complexities of individual illness experience leading to diagnostic systems (72), we have abstracted “prominent averages” from the individual cultural contextual narratives, illness meanings, and help seeking with the help of a specially designed framework (73) for comparative cross-cultural epidemiological assessment of

disorders of fatigue and weakness. Also, the ambiguity of the illness experience of NSDs is well suited for facilitating patients' projections about PCs, thus enriching the explanatory models they provided. Additionally, NSDs are shown to be related to stresses in various settings across the world. EMIC is well suited to elicit and measure the qualitative and quantitative aspects of one's experience, meaning, and behavior, especially related to stress where subjective appraisal is crucial for understanding and management. And above all, cultural epidemiology has extensive and intensive application and experience in India over last three decades.

1.10.4 Cultural epidemiology in India

Cultural epidemiological studies of illnesses have dealt with important aspects of public health issues in India related to leprosy (74), cholera (69), epilepsy (71), gender and suicide in sociocultural contexts (75), common mental health problems in Mumbai slum community (76), organization of health services in Sunderban in West Bengal (77), tuberculosis (78) (79), and mental disorders like depression (80) and schizophrenia (81). The issues covered range from symptomatology, phenomenology, diagnoses, traditional Hindu system of medicine - Ayurved, treatment and treatment adherence, access to medicines in Africa and South Asia, and most importantly stigma associated with various conditions related to mental health and illness. Its forays into "media and mental health" may be powerful in view of health message content and delivery. Cultural epidemiology has also proved valuable in organizing and instituting important academic and professional courses in Public Health at the National Institute of Epidemiology in India. And currently it is fulfilling an important role as an international site for the task force of DSM-V for cultural formulation (Weiss MG, personal communication, October 2011), in addition to the forthcoming study of acceptance of influenza vaccine in Pune.

Moreover, cultural epidemiology has a crucial role in guiding policy regarding striking a balance between providing individually tailored treatment, public health initiatives, and health service initiatives in the context of ethnic inequalities in health status (82) rather than 'explaining away' ethnic inequalities on genetic basis, or subjecting data to sophisticated statistical treatment to take care of 'confounding'.

Phase 1: Classical Epidemiology - magnitude of burden

- Prevalence study was done using a specially designed semi-structured interview of consecutive patients attending the four outpatient clinics.

Phase 2: Clinical Psychiatric and Cultural Epidemiology (including Comparative Nosology)

- Biomedical and nutritional assessments in a case-control design included internist's assessment, lab tests, and measuring BMI and corrected arm muscle area (CAMA).
- Psychiatric morbidity was assessed using Structured Clinical Interview for DSM-IV (SCID-I) modules for diagnostic categories. Hamilton Depression and Anxiety Rating Scales (HDARS) and Symptom Check-List 90 (SCL 90, enhanced) were used for dimensional measurements.
- Diagnostic interviews were used to assess CFS and NT (ICD-10, CCMD-2, and DSM-IV draft criteria sets).
- To assess the cultural epidemiology, an EMIC interview was developed and used to elicit illness experience (Patterns of Distress, PD), meaning (Perceived Causes, PC), and behavior (Help Seeking, HS), along with other clinically relevant information.
- Data obtained from SCID and EMIC interviews are being analyzed to identify cultural epidemiological features and possible determinants of depression among patients with NSDs.

1.11 Ethics Review

The project proposal was approved by the Ethics Review Committee of BJ Medical College in Pune, India, to which the Sassoon General Hospitals are affiliated. An independent Institutional Review Board was constituted for the project. The project was approved by the Indian Council for Medical Research (ICMR) and the Office for Protection from Research Risks (OPRR) of the US Department of Health and Human Services.

1.12 Organization of the following chapters

The following chapters of the thesis will comprise the papers that outline and discuss the key research questions:

Estimation of magnitude of the problem is detailed in Chapter 2, the prevalence of NSD core criteria among consecutive patients attending the four study clinics. Assessment of biomedical markers and psychiatric comorbidity of NSDs are described in Chapter 3. The diagnostic concordance of NSDs with CFS and three formulations of NT to assess and account for cross-cultural variation among existing formulations is discussed in Chapter 4. Elaboration of the cross-clinic features of cultural epidemiology of NSDs is presented in Chapter 5, and features of Indian study sample are compared with other studies of NSDs across the globe. We have presented preliminary

findings from analysis of the relationship of perceived causes of NSDs and depression in chapter 6, the concluding discussion. Although the full analysis remains a work in progress, this discussion addresses the last of the stated objectives of the thesis. This concluding discussion chapter also considers practical clinical and public health implications of the study.

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The group led by Dr Keh-Ming Lin's Centre for Research on Psychobiology of Ethnicity from UCLA included the Indian site in their cross-national project ('Pacific Rim Collaborators') to study disorders of chronic fatigue. This study of 'Cultural Disorders of Fatigue and Weakness in India' was funded by the US Department of Health and Human Services (US held Rupee Fund) grant No. N-439-645.

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2. Prevalence of Neurasthenia Spectrum Disorders in specialty outpatient clinics of Pune, India

Published as:

Prevalence of clinically significant functional fatigue or weakness in specialty outpatient clinics of Pune, India.

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2.1 Abstract

Background: Disorders of fatigue are important in clinical practice but inadequately studied in developing countries. Questions about their consistency and variation across cultures also require attention. The standard professional diagnostic formulations of these disorders, namely, chronic fatigue syndrome and neurasthenia, are not used widely in India, perhaps due to lack of research and poor appreciation of their clinical significance. Recognising that patients with Clinically Significant Functional Fatigue or Weakness (CS-FoW, i.e. Neurasthenia Spectrum Disorders-core criteria, NSD-cc) often seek help from various care-givers, we studied prevalence of this condition in four specialty clinics of Sassoon Hospital, Pune.

Methods: We used an operationally defined set of criteria to create a screening instrument. Trained research assistants surveyed 1,874 consecutive patients from Psychiatry, Medicine, Dermatology, and Ayurved clinics. Data were entered and analysed to compute the rates of this condition, compare them across clinics and between sexes, and to compute rates adjusted for age, sex, and the clinic attended.

Results: Overall prevalence was 5.02% with higher rates in the Dermatology and Ayurved clinics than in Psychiatry and Medicine clinics. The female preponderance (63.83%) was notable ($p < .001$). Mean age of patients with this condition was similar across clinics. Logistic regression showed female sex (OR 2.19, 95% CI 1.41 to 3.40) and dermatology clinic (OR 1.70, 1.02 to 2.85) to be significant predictors of CS-FoW.

Discussion: Female preponderance indicates the need for studies with gender focus. Clinical and cultural epidemiological studies informing psychiatrists as well as other physicians are necessary. Need for counselling for majority of these patients calls for appropriate changes in health care delivery.

Key Words: Neurasthenia, Chronic fatigue syndrome, Clinically significant fatigue or weakness

2.2 Introduction

Disorders of clinically significant fatigue or weakness (CS-FoW) are frequently reported clinical problems (1,2). They are defined in different ways in various settings, often emphasising fatigue in Europe and North America, and somatic weakness in East Asia. Prevalence rates vary for these different constructs (e.g., Chronic Fatigue Syndrome, chronic fatigue, fibromyalgia, neurasthenia), which have been more widely studied in Western Europe, Australia, and North America (3-5). Neurasthenia and Chronic Fatigue Syndrome (CFS)

are the prominent diagnostic formulations of comparable clinical problems, and they have been studied more extensively in China, Taiwan, Japan, and other East Asian countries (2,5,6).

There are few studies in this area in India and other developing countries (7,8). We require data to estimate the significance of this clinical problem, as well as for cross-cultural comparison. This has implications for the organization and delivery of general health services and for psychiatric services and consultation in general medical clinics considering high psychiatric comorbidity of fatigue disorders (4).

Chronic Fatigue Syndrome and Neurasthenia (CDC, ICD-10, and Chinese Classification of Mental Disorders, 2nd edition, i.e. CCMD-2) are widely used to address CS-FoW (1,9-11). Weakness is more likely to be included in Asian concepts of neurasthenia, compared with Western concepts of chronic fatigue. Neither of them have been validated or widely used in India. Therefore, use of an operational formulation of clinical significance for studying clinical epidemiology is indicated, recognising the importance of considering both fatigue and weakness in our South Asian study.

Over the course of urbanization and epidemiologic health transition (12), we expect chronic health problems, such as CS-FoW to become more significant in India and other developing countries. Baseline data documenting current clinical burden, will also be useful to track changing epidemiological patterns in future.

2.3 Objectives

This study aimed to clarify cross-cultural questions about the clinical epidemiology of CS-FoW in urban India, provide a baseline for changing clinical patterns over the course of urbanization, and clarify clinical patterns in diverse settings within the health care system.

Specific objectives:

- To determine the prevalence of patients with clinically significant functional fatigue or weakness presenting for treatment in outpatient clinics of an urban Indian hospital, and
- To compare the prevalence in different specialty outpatient clinics of Psychiatry, Medicine, Dermatology, and Ayurved.

2.4 Setting

Because fatigue and weakness cover diverse patterns of distress, clinical explanations, cultural meanings, and medical as well as non-medical help seeking, it is reasonable to expect that patients will select or be referred for treatment in various clinics for their health care. In our urban hospital in

Pune, such outpatient clinics include Medicine, Psychiatry, Dermatology, and Ayurved. The last of these refers to the traditional system of Indian Medicine, based on theories attributing strength, vigour, fatigue, and weakness to a humoral balance, with reference to cultural physiological concepts of semen (*dhatu*), material substance (*prakriti*), environmental conditions, and so forth.

2.5 Methods

We formulated criteria to identify CS-FoW, (i.e., NSD-core criteria, NSD-cc) based on the most relevant existing diagnostic formulations and practical clinical relevance. These criteria were used to develop an instrument to assess CS-FoW, as follows:

1. *Spontaneous report in the clinical history, rather than probed account, of fatigue or weakness as a significant problem motivating clinical help seeking:*

Patients were asked, "What is the problem that brings you here today for treatment?" If, among other presenting complaints, patient reported fatigue or weakness, it was taken as a spontaneous report. Next question was, "Are there any other problems that are associated with this condition?" If patient reported fatigue or weakness in response to this open ended question, then this was also taken as spontaneous report. In contrast, affirmative response to a direct leading question, "Have fatigue and weakness been a problem for you?" was recorded but not counted as a positive response, because this is a probed account.

2. *Severity of symptoms resulting in work impairment as reported by the patient*
3. *Duration of at least 6 months*
4. *Medical assessment identifying no biomedical basis for these symptoms:*

Clinical medical evaluation ruled out an apparent biological basis for these symptoms, based on history, physical findings, and clinically indicated laboratory studies. Trained research assistants used the screening instrument in a pilot study for feasibility. Patients were then interviewed using the instrument in outpatient clinics of Medicine, Psychiatry, Dermatology, and Ayurved of the Sassoon General Hospital.

After considering the annual attendance of patients in each of the four clinics of the hospital and consultations with the bio-statistician, number required to sample was determined from each clinic for studying prevalence.

Consecutive patients attending in each of these clinics were interviewed before their assessment by the physician. For those who fulfilled the criteria, the physician was consulted whether he/she thought there was a biomedical basis for patient's complaints of fatigue or weakness. If necessary, additional investigations as advised by the physician were carried out.

Inclusion criteria: Consenting patients fulfilling all 4 criteria defined above were included.

Exclusion criteria: Following patients were excluded from the study:

- Age below 17 or above 75 years
- Those suffering from obvious psychosis or substance use disorder
- Gravity of the illness requiring immediate admission into the hospital.

2.5.1 Statistical Analyses

Data were entered in Epi Info 6.04d with appropriate range and logic checks, and they were imported and analysed with SAS (Dr MW). Rates of CS-FoW were calculated based on the above inclusion and exclusion criteria. Sex-wise prevalence and distribution of mean age across clinics for patients with and without CS-FoW (i.e. screened positive and sampled) were compared. Analyses adjusted for age, sex, and the outpatient clinic were based on a logistic regression model.

2.6 Results

Overall prevalence of CS-FoW in the four clinics together was 5.02%. Rates of CS-FoW were highest in the Ayurved clinic and lowest in the Psychiatry clinic (Table 2.1). Combined rates in Ayurved and Dermatology were higher than rates in Psychiatry and Medicine clinics ($p=.01$). Self-reported work impairment due to fatigue or weakness was reported by over 53% of patients, most frequently in the Medicine clinic, and least frequently in Dermatology. The percentage of patients who were ruled out because a biomedical basis of their symptoms was identified was highest in Medicine. Number of patients failing to meet CS-FoW criteria because they would not seek medical help for their condition was highest in Dermatology.

Table 2.1: Prevalence of clinically significant functional fatigue or weakness (CS-FoW or NSD-cc) in four clinics (%)

Screening criteria	Psychiatry (n=389)	Medicine (n=884)	Dermatology (n=414)	Ayurved (n=187)	Total (N=1,874)
1. Spontaneous report fatigue or weakness	5.1	19.9	8.0	15.5	13.8
<i>Additional responses to probe¹</i>	<i>54.0</i>	<i>59.8</i>	<i>42.3</i>	<i>56.1</i>	<i>54.4</i>
2. Work impairment	41.1	65.4	37.9	57.2	53.5
3. Duration more than 6 months	33.9	32.4	32.4	52.4	34.7
4. Seeking treatment for CS-FAW	30.3	54.0	24.6	41.7	41.4
5. No identified biomedical basis	31.6	20.9	27.3	37.4	26.2
CS-FoW²	3.3	4.5	6.5	7.5	5.0

p=0.069, (Chi-Square test), showing the difference in prevalence across clinics.

¹Probed responses, not regarded as fulfilling criteria for CS-FoW.

²Fulfilling 5 criteria.

Women outnumbered men in the group diagnosed with CS-FoW (p<.0001). Women in the Dermatology and Medicine clinics were more likely than men to be diagnosed with CS-FoW (p=.0006 and .004, respectively) (Table 2.2).

Table 2.2: Sexwise prevalence of patients screened and identified with clinically significant functional fatigue or weakness (NSD-cc) in four clinics (%)

Patients	Psychiatry (N=389, n=13)		Medicine (N=884, n=40)		Dermatology (N=414, n=27)		Ayurved (N=187, n=14)		Total (N=1,874, n=94)	
	M	F	M	F	M	F	M	F	M	F
Sampled (N)- sexwise (<i>Row %</i>)	54.5	45.5	49.5	50.5	67.1	32.9	38.0	62.0	53.3	46.7
CS-FoW (n)- sexwise (<i>Row %</i>)	53.8	46.2	27.5	72.5	37.0	63.0	42.9	57.1	36.2	63.8
p value (M-F) comparison	0.96		0.004		0.0006		0.70		<0.0001	

p=.07, comparison of CS-FoW across clinics.

p=.09, comparison of CS-FoW males across clinics.

p=.02, comparison of CS-FoW females across clinics.

Patients in the Ayurved clinic were oldest (Table 2.3). Although patients with CS-FoW appeared youngest in Dermatology clinic, overall differences in the age distribution across clinics were not significant.

Table 2.3: Sexwise distribution of mean and median age of patients with clinically significant fatigue or weakness (NSD-cc) in four outpatient clinics

Age	Psychiatry			Medicine			dermatology			Ayurved			Four Clinics		
	M	F	Both	M	F	Both	M	F	Both	M	F	Both	M	F	Both
Total screened															
Number	212	177	389	438	446	884	278	136	414	71	116	187	999	875	1874
Mean	35.4	38.8	36.9	40.9	40.0	40.4	39.2	37.6	38.7	44.7	42.1	43.1	39.5	39.7	39.6
Std dev	12.1	12.9	12.6	16.0	15.2	15.6	15.5	13.7	14.9	15.5	12.6	13.8	15.2	14.2	14.8
Median	34.0	39.0	35.0	37.0	38.0	37.0	36.5	35.0	35.5	44.0	40.0	42.0	36.0	38.0	37.0
CS-FoW															
Number	7	6	13	11	29	40	10	17	27	6	8	14	34	60	94
Mean	42.1	40.2	41.2	40.4	42.3	41.8	36.5	33.6	34.7	43.5	43.8	43.6	40.1	39.9	40.0
Std dev	19.5	19.9	18.9	15.4	9.9	11.5	13.7	10.0	11.3	15.1	14.6	14.2	15.3	12.2	13.3
Median	46.0	30.5	35.0	35.0	40.0	40.0	31.5	35.0	35.0	38.0	42.5	39.0	35.5	38.0	38.0

Differences in the age distribution of patients with and without CS-FoW were not significant (Wilcoxon Rank Sum Test). Differences in the age distribution of patients sampled were significantly different across clinics ($p < .0001$ for men, $p = .05$ for women, $p < .0001$ both, Kruskal-Wallis Test), but not for patients who screened positive ($p = .70$ for men, $p = .07$ for women, $p = .09$ both).

Analyses adjusted for sex, age, and outpatient clinic showed that female sex (OR 2.19, 95% CI 1.41 to 3.40), and the dermatology clinic (OR 1.70, 1.02 to 2.85) were positively associated with CS-FoW (Table 2.4).

Table 2.4: Comparison of CS-FoW (NSD-cc) in four clinics, adjusted analysis.

Variable	95% CI			P-value
	OR	Lower	Upper	
Sex (female)	2.19	1.41	3.40	0.00
Age	1.00	0.99	1.02	0.87
Medicine	1.00	-	-	-
Dermatology	1.70	1.02	2.85	0.04
Psychiatry	0.76	0.40	1.44	0.40
Ayurved	1.57	0.83	2.96	0.16

2.7 Discussion

2.7.1 Significance of FoW in Hospital setting:

Apart from population studies and research in primary care, disorders of fatigue or weakness have special significance in general hospital specialty clinics. These disorders are poorly understood chronic conditions characterised by repeated attendance of dissatisfied patients who require services from the health care system (11). Lesser resources and prioritization of more severe disorders marginalize patients with CS-FoW even further in developing countries. FoW disorders are embedded in somatic complaints with much disability in daily life and occupational functioning (5). CFS is associated with high psychiatric comorbidity, and subjective quality of life is lower in CFS than mental disorders (13). This further underscores clinical significance of disorders of FoW.

2.7.2 Value of the operational definition:

CFS is neither a distinct nosological disorder, nor a discrete diagnostic entity. These disorders share the common characteristics of identifying severely fatigued groups of patients based on symptoms, disability, and exclusion of explanatory illnesses. Prins et al (11) have highlighted a need to validate consensus criteria by study of cohorts of such patients in several countries. Working definition of CS-FoW in our study fulfils all the above characteristics and is expected to fulfil the need of future studies.

2.7.3 Ambivalence of biomedical approach, varying definitions, and comparative prevalence:

Taylor (14) examined the annual reports of Queen Square Hospital, London, from 1870 to 1947. He found that since its inception, neurasthenia had been diagnosed in the range of 6 to 11% until 1930. Subsequently, it suddenly ceased to be diagnosed and patients were reclassified into psychological diagnoses, reflecting the on-going ambivalence of biomedical diagnostic systems toward fatiguing illnesses.

Overall prevalence in the current study (5.02%) is comparable with that of neurasthenia (5) with its gender bias (2) (15). Widely varying prevalence rates (15) have little direct comparative value due to different definitions and settings. For example, if the biomedical basis clause is dropped from the definition of CS-FoW (16), our sample will show a prevalence of 16.0%. Clinic prevalence of 5.02% in our study, apparently lower than the 12.1% in population of Indian women⁹, is due to the inclusion of men in the sample and a more stringent definition of spontaneously reported FoW.

WHO Collaborative Study on Psychological Problems in General Health Care studied prevalence of substantial unexplained fatigue in primary health care at 15 centres in 14 countries (2). It was more in western than non-western centres. Patients from developed countries were more likely to report fatigue on direct questioning, but those from less developed countries were more likely to 'choose it as a presenting complaint from a list of symptoms'. Bangalore site from this study reported a prevalence of 3.83% of 'substantial unexplained fatigue' and 17.12% as presenting complaint. Our definition of CS-FoW is more stringent than the 'substantial unexplained fatigue', but from specialty clinics, thus comparing well with 5.02% prevalence and 13.77% of spontaneously volunteered fatigue or weakness in our study.

2.7.4 Organizational and socioeconomic contextual differences in disorders of FoW:

Our findings suggest that although disorders of FoW are not a widely recognised and used diagnosis, its prevalence indicates that implications of these disorders will require more careful consideration. Such patients are often referred extensively within the government health system, because it is difficult to identify a readily treatable biomedical basis for their problems, and because of that, they are also frequently referred to psychiatry. In private practice, on the other hand they may constitute a large component of non-acute clinical practice. Skapinakis et al indicated fatigue as representing a

hidden psychiatric need in less developed countries, or just an expression of psychosocial distress in more developed countries, depending on the economic context (2). This hypothesis may very well be applicable to the disparate Government Hospital and private practice scenario in developing countries. Irrespective of the purpose of help seeking, need for counselling is obvious in both categories.

2.7.5 Cross-clinic differences:

Variations in the patterns of response across clinics were noted. Medicine patients were most likely to seek medical treatment and to be ruled out for biomedical causes. This may indicate higher rates of subclinical conditions for these patients, and other biometric studies may be useful to test that hypothesis.

Patients in Dermatology were least likely to seek other medical help, possibly resulting from stigma and reluctance to disclose problems associated with sexually transmitted diseases, which are treated in that clinic.

High degree of self-reported work impairment explains lower levels of productivity and subjective quality of life associated with this condition. Work impairment was reported less frequently by patients in Dermatology and Psychiatry. More number of Ayurved patients reported duration greater than six months as compared to other clinics, with high work impairment. Differences in the patterns of symptoms and illness behaviour related to CS-FoW, thus suggest the value of examining the clinic specific features of the condition more carefully.

In trying to explain the factors that bring patients to each of these four clinics for a similar set of clinical problems, we expect that cultural meanings are more likely to influence help seeking (e.g. Ayurveda), and clinical meanings are more likely to influence referral patterns. Cultural epidemiological studies of the experience and meaning of patients' problems and clinical studies of the psychiatric and biomedical features of these patients are required to clarify these aspects of help seeking and referral. Although overall prevalence and female preponderance are similar to the findings reported from other parts of the world, combined rates from Dermatology and Ayurved being significantly higher indicate the cultural origin of CS-FoW in these clinics.

2.8 Implications

Patients with CS-FOW are often marginalised and ignored on the hospital outpatient clinics, because a biomedical basis of their condition cannot be identified. Our study shows, however, that the number of these patients is

substantial, and insofar as we expect chronic diseases to be increasing with urbanization (12), the need for attending to the clinical problems of these patients will increase further.

Female gender is a prominent risk factor for CS-FoW, prompting to look into the cross-cutting and distinctive cultural as well as biopsychosocial dimensions of women's experience of fatiguing illnesses.

Health professionals from all disciplines should be aware of the significance and features of this problem, as patients with CS-FoW consult various medical and non-medical care givers for their problems.

Because many CS-FoW patients are likely to be referred to psychiatry, it is important for psychiatrists to be aware of the clinical epidemiology of the condition. Further experience and research to clarify the psychiatric and biomedical problems of these patients in India is required to serve their clinical needs. Inasmuch as cultural meanings often shape the presentation and features of these conditions (e.g., perceived causes such as dhat syndrome), and prevalence (combined rates) being significantly higher in Dermatology and Ayurved clinics, cultural epidemiological studies are needed for clinicians to better understand the nature and perceived needs of these patients, and to work effectively with them.

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3. Biomedical Markers and Psychiatric Morbidity of Neurasthenia Spectrum Disorders in Four Outpatient Clinics in India

(NSDs in India)

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3.1 Abstract

Background: Disorders of unexplained fatigue are researched globally and debated prominently concerning their biomedical and psychiatric comorbidity. Such studies are needed in India. We intended to identify biomedical markers from among routine investigations for such disorders in the setting and psychiatric morbidity of neurasthenia spectrum disorders (NSDs). We also aimed to compare biomedical markers of patients with controls and to study correlation between biomedical markers and psychiatric morbidity in four specialty outpatient clinics of Psychiatry, Medicine, Dermatology, and Ayurved of an urban general hospital.

Methods: We used case-control design for biomedical markers and diagnostic interviews for assessment of psychiatric morbidity. Patients (N = 352) were recruited using screening criteria and Structured Clinical Interview for DSM-IV screening module. They were compared with controls (N = 38) for relevant biomedical markers. Psychiatric morbidity was assessed with SCID-I interviews, Hamilton scales, and Symptom Check List-90 (SCL-90). Correlations between a nutritional index and axis I morbidity were studied. Frequencies and means of biomedical markers and psychiatric diagnoses were compared and associations assessed with regression analysis.

Results: Corrected arm muscle area (CAMA) was significantly lower among patients ($P < 0.001$), but not anemia. Anxiety (73.0%) and somatoform (61.4%) disorders, especially nonspecific diagnoses, were more frequent than depressive disorders (55.4%). Generally, Hamilton and SCL scores were lowest in Ayurved clinic, and highest in Psychiatry clinic. Presence of Generalized Anxiety Disorder (GAD) and adjustment disorders correlated with low nutritional index.

Discussion: Malnutrition or de-conditioning that may explain weakness need to be considered in the management of NSDs in India, particularly with comorbid GAD or adjustment disorders. Weakness and anxiety, rather than fatigue and depression, are distinct features of Indian patients. SCL may be more useful than categorical diagnoses in NSDs. NSDs are an independent entity with nonspecific psychiatric comorbidity. Cross clinic differences among patients with similar complaints highlight need for idiographic studies.

Keywords: Anthropometry, anxiety disorders, malnutrition, neurasthenia, somatoform disorders

3.2 Introduction

Fatigue and weakness are common symptoms in medical practice. When

the identifiable biomedical causes of fatigue are ruled out, unexplained fatigue and weakness are still very common (1-4). These clinically significant conditions are classified with overlapping diagnostic categories (5,6), such as neurasthenia, chronic fatigue syndrome (CFS) and fibromyalgia. Collectively, they may be regarded as neurasthenia spectrum disorders (NSDs) (7,8), which are a subset of functional somatic syndromes (9). NSDs are heterogeneous conditions with poor diagnostic concordance among various categories (8). NSDs have been studied extensively in Europe, Australia, and North America where their nomenclature, etiology, classification, and treatment have been debated. Biomedical investigation of NSDs in developed countries deal with the sophisticated immune and genetic mechanisms (10-13). NSDs are often characterized by high psychiatric comorbidity, especially depression (14-16). It is argued that neurasthenia is a subset of depression (17). Whether or not psychiatric disorders are an integral feature of these conditions remains controversial.

NSDs are rarely diagnosed or researched in developing countries, though they are likely to become more significant with increasing urbanization (18,19). There are no psychosomatic clinics in Indian general hospitals to study or treat the various psychosomatic illnesses including NSDs. A clinic-based study of NSDs documented its prevalence to be 5% raising questions about its biomedical and psychiatric correlates (20). Clinical experience shows that patients with NSDs present for treatment in Indian urban general hospitals in a range of specialty clinics. Physicians in these clinics manage these patients according to their training specialty. This often leaves out comprehensive approach of biopsychosocial perspective resulting in restricted focus on comorbidity identified in respective clinics.

There are special challenges while dealing with NSDs in developing countries, where prevalence of infectious and nutritional deficiency disorders is high. Anemia was reported to be 44% in Indian men (21) and 50% in women (22). Relationship between neuropsychiatric disorders and nutritional disorders is also well established. Considering the heterogeneity of origin of symptoms of fatigue or weakness, biomedical disorders remain a difficult yet important differential diagnosis of putative functional somatic syndromes in general, and of NSDs in particular. Scarcity of medical personnel and lack of availability or affordability of sophisticated investigations to gauge nutritional deficiencies is commonplace in developing countries. In a community prevalence survey among women in Goa, India, Patel *et al* (23) considered nutritional and infectious disorders and psychopathology as risk factors of chronic fatigue.

The Indian *dhat* syndrome shares clinical features of neurasthenia, with

symptoms attributed by patients to loss of semen (24-28). The few relevant studies in India that do consider nosological status of *dhat* syndrome are anecdotal case reports (25,28). Clinical experience shows that fatigue and weakness present in the contexts of different physical and psychiatric syndromes. Because they are poorly understood, doctors of different specialties offer different clinical explanations. Frustrated patients and their relatives entertain varied cultural meanings, as the condition becomes chronic. Also, inasmuch as conventional doctors do not provide satisfactory care, doctor-shopping and faith healing are common. Thus, these patients are seen in various clinics. Patients select a particular clinic or get referred from a previously attended clinic.

3.3 Objectives

Biologic and psychiatric profiles of NSDs in Indian clinics have not been studied. This study was undertaken to clarify the biologic markers and psychiatric morbidity of patients with NSDs in four specialty out-patient clinics (Psychiatry, Medicine, Dermatology, and Ayurved) in an urban hospital in India. It aimed to compare biometric features of patients across clinics and with controls. We also aimed to compute an arbitrary nutritional index to examine the correlation between this index and the psychiatric morbidity.

3.4 Methods

3.4.1 Design

This study is a part of larger study of NSDs. In the context of routine hospital procedures, patients were enrolled based on spontaneously volunteered complaints of fatigue or weakness. For those patients who fulfilled the screening criteria, a physician was consulted. Trained research assistants screened the outpatients from the four study clinics. Those who screened positive and were willing and able to participate in this study, were recruited. For the study findings reported here, research interview included diagnostic interviews for SCID-I, HDARS, SCL-90 (enhanced) apart from laboratory investigations and biometric assessments.

3.4.2 Setting and the four study clinics

This study was conducted in a large hospital with tertiary care facilities. It is attached to a Government Medical College and treats low-income patients through a State Government subsidy. The Ayurved clinic treats patients based on traditional Hindu system of medicine, which focuses on theories of humoral balance with reference to cultural physiologic concepts such as semen (*dhatu*),

material substance (*prakriti*), and environmental conditions. Ayurved clinic is commonly valued by patients for its holistic approach, noninvasive methods, and fewer side effects. The Medicine clinic conforms to conventional biomedical clinical techniques. The Psychiatry clinic provides treatment for psychotic, mood, and other psychiatric disorders, and also follows standard international psychiatric guidelines. In addition to skin disorders, the Dermatology clinic also treats patients with sexually transmitted diseases, which are frequently associated with stigma.

3.4.3 Instruments and assessments

3.4.3.1 Screening criteria and the sample

To deal with the problem of overlapping international diagnostic categories (6) of different NSDs that are not used in Indian clinics routinely, we formulated the essential criteria of NSDs to include patients in this study. A positive screen for a NSD was based on the following criteria: (a) spontaneously reported complaints of fatigue or weakness among the presenting symptoms, (b) duration of symptoms for 6 months or more, (c) sufficient distress to motivate treatment seeking, (d) functional impairment with work or related activities, and (e) no biomedical basis for symptoms based on an evaluation by an internist physician considering clinical history, physical findings, standard laboratory studies, and clinically indicated tests.

Patients from the four study clinics between the ages of 17 and 65 who screened positive for NSD and were willing and able to complete the interview were recruited into the study after written informed consent. Those with overt psychotic disorders or substance use disorders were excluded from the study using the screening module of SCID.

Control patients were selected from the Psychiatry clinic, who met sampling criteria other than the core features of NSD. They were matched for age. Controls were selected only from the psychiatry clinic. They were nonpsychotic, non-substance dependent patients without the core features of NSDs. They were primarily afflicted by neurotic depression, anxiety, or somatoform disorders without fatigue or weakness. It has been argued that NSDs are only a manifestation of subclinical depression. Therefore, this set of controls gave us an opportunity to assess biomedical and anthropometric features of patients with the same psychiatric morbidity without NSDs.

3.4.3.2 Biometric assessment

For study patients and controls, we assessed hemoglobin, body mass index (BMI), and corrected arm muscle area (CAMA) to assess nutritional fac-

tors. Height and weight were measured using standard methods for the computation of BMI. Triceps skin-fold thickness (using Harpenden's John and Bull callipers) and mid-arm circumference were measured leading to computation of CAMA.

3.4.3.3 Index of nutrition

An index of nutrition was computed arbitrarily by adding the values of hemoglobin, BMI, and CAMA for each patient represented by the quartile (range: 0-3) to which the patient belonged. The value of the index ranged from 0 to 9 for each patient with respect to all the three parameters. Subsequently, the mean index of nutrition for each clinic for each disorder was computed. For this, we considered patients for whom all three parameters were available. A higher value of the index indicated better nutritional status.

3.4.3.4 Medical evaluation

Medical assessment to rule out infective and metabolic problems that might be responsible for core features of NSDs included estimation of hemoglobin by Sahli's method, total white blood cell counts (WBCs) by microscopic examination of the peripheral blood smear, fasting blood sugar level using Glucose Oxydase Peroxidase Kit, blood urea level estimation by Diacetyl Monoxime method, and routine and microscopic examinations of urine and stool samples. Other tests such as X-ray chest, electrocardiogram, thyroid tests, and HIV test were carried out wherever the internist physician found them necessary. The internist's opinion on clinical evaluation along with investigations decided whether patient's complaints were having a biomedical basis.

3.4.3.5 Psychiatric assessment

For study patients only, an appointment for psychiatric assessment was made. Psychiatric diagnostic assessment used the research version of Structured Clinical Interview for DSM-IV for axis I (SCID-I) (29). Other assessments included the combined Hamilton Depression and Anxiety Rating Scales (30), and Symptom Check-List 90 (31) enhanced with a supplement to assess additional symptoms of fatigue or weakness. Instruments were translated into the local language (Marathi) using appropriate methods for validation, namely translation, back-translation, and consensus.

3.4.4 Statistical analyses

Data for biometric and psychiatric assessments were entered in Epi Info 6.04 d, using a data entry mask with range and logic checks. Double entry

verified the accuracy of data entry. BMI, CAMA, hemoglobin, and other variables for biomedical evaluation were analyzed with a comparison of means across clinics, and between the controls and outpatient study groups. Age and sex adjusted means were computed for BMI, CAMA, and hemoglobin. The distribution of SCID-I diagnoses and mean scale scores of HDARS and SCL-90 assessments were compared across clinics, as well as subscale scores of the SCL-90 using appropriate tests of significance.

Comparison of the index of nutrition was done among patients with or without an axis I disorder. The differences between the means of patients not diagnosed with that disorder and those that were diagnosed were compared using *t*-test and parallel nonparametric test. Disorders for which frequency of available patients was < 10% were excluded from this analysis.

3.5 Results

3.5.1 Sample characteristics

A total of 352 patients (with mean age 34.3 yrs, SD 10.34) were studied from the four clinics of Psychiatry, Medicine, Dermatology, and Ayurved. Most were literate, urban residents (67.0%), Hindu (76.1%), employed (53.1%), and earning an income of < Rs. 4000 per month (68.2%). The pooled sample had more women (63.8%), mainly housewives. Women constituted approximately half of the patient samples in Psychiatry (49.4%) and Dermatology (47.1%). Women were the majority in both the Medicine (87.8%) and Ayurved (67.4%) clinics. Patients in the Ayurved clinic were the oldest (mean age 37.7 years), and in Dermatology they were the youngest (mean age: 31.5 years).

Among 38 control patients, 20 males had a mean age of 35.3 years (SD: 8.35) and 18 females (mean age: 34.8, SD: 10.095). Among patients, males had a mean age of 31.4 years (SD: 10.58, $P = 0.12$) and females had a mean age of 36.0 years (SD: 9.85, $P = 0.63$).

3.5.2 Identification of biomedical markers of NSDs

Patients recruited into the study had no signs of overt biomedical causes for their complaints of fatigue or weakness, as judged by an internist on clinical evaluation supported by laboratory tests. Total WBCs, fasting blood sugar and blood urea levels, and routine urinalysis and stool examinations of patients and controls were within normal limits.

3.5.3 Nutritional assessments

The mean BMI of patients (21.48, $N = 315$) was similar to that of controls

(21.92, $N = 37$) ($P = 0.27$, Mann-Whitney), and within the normal range for Asian population (Table 3.1). Female patients had a higher mean BMI (22.15) than male patients (20.36).

Mean CAMA for patients (27.33 sq cm, $N = 308$) was significantly lower than controls (39.45 sq cm, $N = 37$, $P < 0.001$, Mann-Whitney). The mean CAMA for female cases (24.52 sq cm) was significantly lower than male cases (32.04 sq cm) ($P < 0.001$), but there was little difference between sexes among controls ($P = 0.94$, Mann-Whitney). Across clinics, Medicine patients had the lowest mean CAMA scores and Ayurved patients had the highest mean CAMA scores ($P < 0.001$) (Table 3.1).

Mean hemoglobin value of patients (11.49 g/dl, $N = 326$) was similar to that of controls (11.32 g/dl, $N = 34$, $P = 0.82$). Medicine clinic patients had significantly lower mean hemoglobin values (10.62 g/dl) than other clinics (Table 3.1).

Table 3.1: Sexwise distribution of Hemoglobin levels (g/dL), BMI & CAMA (sq cm) for patients and controls

Bio. parameter	Sex	Psychiatry		Medicine		Dermatology		Ayurved		P-value ^a	Total		Controls		P-value ^b
		n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)		n	Mean (SD)	n	Mean (SD)	
Hb (g/dL)	M	38	12.75 1.15	12	11.83 0.58	41	12.54 1.20	26	13.53 1.49	0.0004	117	12.76 1.29	20	11.75 1.13	0.0019
	F	39	10.5 1.18	82	10.45 1.06	37	10.76 0.90	51	11.51 1.50	0.0001	209	10.77 1.25	14	10.71 1.55	0.9811
	Both	77	11.61 1.62	94	10.62 1.11	78	11.69 1.39	77	12.2 1.77	<0.0001	326	11.49 1.58	34	11.32 1.40	0.8244
Mean *Hb			11.31		10.94		11.4		12.23			11.53		11.11	
BMI	M	40	21.18 3.84	12	19.55 1.9	43	20.01 2.55	23	19.99 3.74	0.5997	118	20.36 3.25	20	21.06 2.55	0.2273
	F	40	23.03 4.58	80	21.7 4.68	36	23.37 6.19	41	21.12 4.18	0.1724	197	22.15 4.92	17	22.93 4.18	0.3572
	Both	80	22.1 4.3	92	21.42 4.47	79	21.54 4.85	64	20.72 4.03	0.3111	315	21.48 4.45	37	21.92 3.48	0.2688
Mean *BMI			22.34		20.89		22.14		20.7			21.45		22.20	
CAMA (sq cm)	M	40	33.22 11.97	12	29.98 14.77	40	28.61 13.91	23	37.02 12.60	0.3846	115	32.04 13.30	20	39.03 10.54	0.0301
	F	39	28.47 8.67	79	18.61 16.14	35	27.37 11.62	40	29.84 11.35	<0.0001	193	24.52 13.99	17	39.94 13.90	0.0005
	Both	79	30.86 10.68	91	20.11 16.35	75	28.04 12.82	63	32.46 12.23	<0.0001	308	27.33 14.19	37	39.45 12.03	<0.0001
Mean *CAMA			30.34		23.08		27.86		32.66			27.46		39.58	

^aKruskall-Wallis test. ^bMann-Whitney test. Hb-Haemoglobin. BMI-Body Mass Index. CAMA-Corrected Arm Muscle Area. M-Male. F-Female.

The overall comparison of means between study patients and controls showed that there was no difference regarding hemoglobin and BMI. CAMA was significantly lower among females from each clinic, and also among males from Dermatology clinic (Table 3.2). Males in the Dermatology clinic had a lower BMI, and both males and females from Medicine clinic had lower BMI, though the difference was not significant. BMI was lower among younger age groups. Males had lower BMI than females.

Table 3.2: Sexwise distribution of Mean Difference in Hemoglobin levels (gm%), BMI & CAMA (sq cm) in NSD (CS-FAW) study patients and controls

Variable	Sex	Psychiatry		Medicine		Dermatology		Ayurved	
		^a Mean Difference	P value ^b	^a Mean Difference	P value ^b	^a Mean Difference	P value ^b	^a Mean Difference	P value ^b
Hb	Male	1.000	0.003	0.080	0.981	0.790	0.022	1.780	<0.001
	Female	-0.214	0.888	-0.264	0.756	0.046	1.000	0.796	0.071
	Both	0.290	0.570	-0.700	0.059	0.370	0.390	0.880	0.008
BMI	Male	0.120	0.999	-1.510	0.477	-1.050	0.535	-1.070	0.618
	Female	0.100	1.000	-1.230	0.646	0.440	0.988	-1.810	0.413
	Both	0.180	0.995	-0.500	0.925	-0.380	0.975	-1.200	0.429
cAMA	Male	-5.810	0.309	-9.050	0.179	-10.420	0.014	-2.010	0.976
	Female	-11.470	0.010	-21.330	<0.001	-12.570	0.005	-10.100	0.026
	Both	-8.590	0.005	-19.340	<0.001	-11.410	<0.001	-6.990	0.026

^aMean difference indicates subtraction between values for cases and controls; negative values indicate cases having smaller values than controls.

^bP value was computed by Dunnnett test for multiple comparisons between cases and controls for individual clinics.

A multivariate regression was performed to study the association between biomedical markers and psychiatric disorders (with female sex, 31-40 year age-group, and controls as the baseline). After controlling for confounding, the multivariate analysis indirectly indicated that patients from the Ayurved clinic had a lower BMI than the controls ($P = 0.02$).

The differences regarding hemoglobin in the crude analysis between patients and controls remained insignificant after adjustment for sex and clinic

(with female sex and controls as baseline). The differences in CAMA between the sexes did not remain after adjustment for sex and clinic. Multivariate analysis with sex, age, and clinic confirms findings of the univariate analysis.

Regarding the index of nutrition (Table 3.3), only those patients from each clinic were considered for whom all three parameters (hemoglobin, BMI, and CAMA) were available. They were 75 in psychiatry, 90 in medicine, 73 in dermatology, and 57 in Ayurved (N = 295).

Table 3.3: Nutritional status of NSD patients: Comparison of mean index of nutrition of patients with and without psychiatric disorders

Variable	Psychiatry (n=75)		Medicine (n=90)		Dermatology (n=73)		Ayurved (n=57)		TOTAL (N=295)	
	Mean Diff	P-Value	Mean Diff	P-Value	Mean Diff	P-Value	Mean Diff	P-Value	Mean Diff	P-Value
Current Major Depressive Episode	0.05	0.9137	0.75	0.2171	0.61	0.3593	1.47	0.1390	0.36	0.2712
CMDE with melancholic features	-0.01	0.9909	0.60	0.5250	0.70	0.5616	1.00	0.6698	0.30	0.5705
Past Major Depressive Episode	-0.64	0.2245	-0.79	0.4393	-1.55	0.1177	-0.02	0.9844	-1.07	0.0097
Dysthymic disorder	-0.50	0.4062	0.06	0.9541	-1.08	0.2153	2.02	0.3883	-0.64	0.3269
Minor depressive disorder	-3.15	0.1116	-1.53	0.0129	-1.61	0.4943	0.59	0.4691	-0.40	0.3970
Panic disorder	-0.34	0.6011	0.06	0.9541	1.47	0.2853	-	-	-0.04	0.9497
Social Phobia	-1.39	0.0021	-0.12	0.8990	-0.65	0.4838	2.09	0.1253	-0.59	0.2167
Specific phobia	-0.75	0.2837	-0.66	0.3529	0.87	0.4219	1.54	0.3571	-0.03	0.9464
Generalized anxiety disorder	-0.24	0.7232	0.07	0.8925	0.09	0.9155	2.16	0.0122	0.64	0.0769
Anxiety Disorder NOS	-0.40	0.5901	-0.56	0.4336	-0.73	0.2441	-0.88	0.2182	-0.79	0.0252
Pain Disorder	-0.22	0.7003	0.69	0.1641	-0.42	0.6159	0.11	0.8954	0.47	0.1511
Undifferentiated Somatoform Disorder	-0.29	0.5955	-1.54	0.0053	-1.02	0.0612	-0.11	0.8618	-0.97	0.0007
Adjustment Disorder	-0.12	0.8721	0.85	0.1000	0.79	0.2835	-0.39	0.6342	0.75	0.0302

Notes: Negative value indicates higher mean index of nutrition for diagnosed patients Positive value indicates lower mean index of nutrition for diagnosed patients

P value is based on t test comparing the difference between means of indices of patients with and without a disorder.

T test: (Not Diagnosed) - (Diagnosed)

Negative value of the mean difference indicates better nutrition for diagnosed patients in that clinic. For example, being diagnosed with social phobia in psychiatry, and minor depressive disorder or undifferentiated somatoform disorder in medicine clinic were associated with better nutrition than when these disorders were not diagnosed, indicating an absence of nutritional

basis with these diagnoses. On the other hand, positive mean difference between those without and with a disorder indicates lower mean index of nutrition for diagnosed patients. For example, mean difference of 2.16 and 0.64 in Ayurved clinic and among total patients, respectively, indicates that generalized anxiety disorder was significantly associated with undernutrition. For patients with core features of NSDs, diagnoses of past major depressive episode, anxiety disorder not otherwise specified (NOS), and undifferentiated somatoform disorder indicated higher nutritional level, but being diagnosed with adjustment disorder was associated with poor nutritional status.

3.5.4 Psychiatric assessments

Table 3.4 summarizes psychiatric disorders based on the SCID-I interviews, and illustrates that patients mostly suffered from common mental disorders. Comorbidity was found in nearly all patients, and only 6.5% had no diagnosis. Anxiety disorders were the most frequent diagnoses, and among them, anxiety disorder NOS was the most commonly diagnosed category, followed by somatoform disorders, and depression.

In the cross-clinic comparisons, the Psychiatry clinic had the highest rates of enduring psychiatric disorders (85.5%), attributable mainly to highest rates of all forms of depression, except minor depressive disorder, which was high in the Medicine and Ayurved clinics. Based on exclusions for depressive and anxiety disorders, Psychiatry patients had lower rates of somatoform disorders and adjustment disorders. Rates of current and past major depressive episodes and of dysthymic disorder were relatively high in dermatology clinic patients. Because of low rates of panic disorders and phobias, overall anxiety was least frequent in the Ayurved clinic, though rates of anxiety disorder NOS were significantly higher for both Dermatology and Ayurved than the other clinics. Undifferentiated somatoform disorder, based on symptoms apart from fatigue and weakness, was also significantly more frequent in Ayurved and Dermatology. Pain disorder was the highest in the Medicine clinic.

Table 3.4: Psychiatric diagnoses of patients with NSD (CS-FAW) disorders (%)

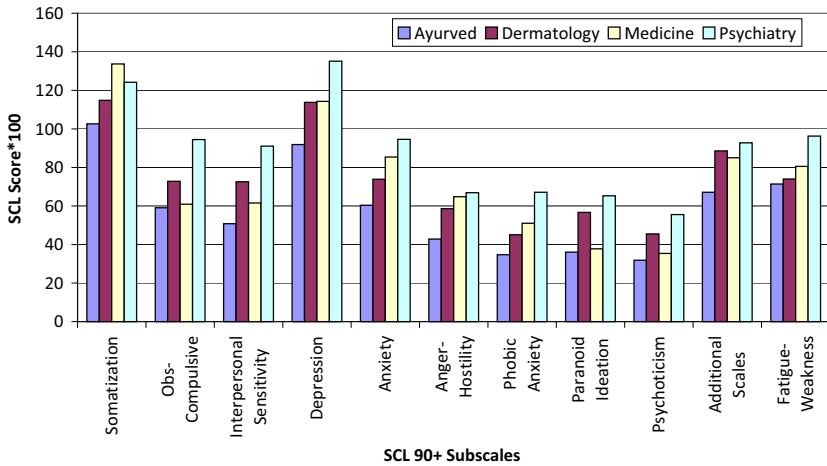
Diagnosis	Psychiatry (n=83)	Medicine (n=98)	Dermatology (n=85)	Ayurved (n=86)	Total (N=352)	p-value (Chi sq)
DEPRESSIVE DISORDERS	86.7	48.0	47.1	41.9	55.4	<0.001
Current major depression	65.1	26.5	31.8	20.9	35.5	<0.001
Past major depression	26.5	6.1	9.4	9.3	12.5	<0.001
Dysthymic disorder	16.9	6.1	11.8	4.7	9.7	0.026
Minor depressive disorder	1.2	18.4	3.5	14.0	9.7	<0.001
ANXIETY DISORDERS	81.9	77.6	75.3	57.0	73.0	0.001
Panic disorder	13.3	7.1	4.7	0.0	6.3	0.004
Panic disorder with agoraphobia	6.0	4.1	1.2	0.0	2.8	-
Agoraphobia without panic	4.8	7.1	4.7	3.5	5.1	-
Obsessive compulsive disorder	2.4	0.0	2.4	0.0	1.1	-
Social phobia	12.0	6.1	8.2	5.8	8.0	0.408
Specific phobia	10.8	13.3	7.1	3.5	8.8	0.102
Post-traumatic stress disorder	4.8	2.0	1.2	0.0	2.0	-
Generalized anxiety disorder	12.0	25.5	11.8	14.0	16.2	0.031
Anxiety disorder NOS	10.8	11.2	28.2	26.7	19.0	0.001
Mixed anxiety depression	4.8	1.0	5.9	3.5	3.7	0.331
SOMATOFORM DISORDERS	51.8	62.2	64.7	66.3	61.4	0.212
Somatization disorder	4.8	3.1	1.2	0.0	2.3	-
Pain disorder	20.5	29.6	12.9	12.8	19.3	0.010
Undifferentiated somatoform disorder ¹	21.7	23.5	45.9	51.2	35.2	<0.001
Hypochondriasis	3.6	6.1	4.7	1.2	4.0	-
Body dysmorphic disorder	1.2	0.0	0.0	1.2	0.6	-
ADJUSTMENT DISORDERS	9.6	25.5	15.3	15.1	16.8	0.131
NO DIAGNOSIS	4.8	7.1	5.9	8.1	6.5	0.830

¹Diagnosis based on symptoms other than fatigue and weakness.

-: Not calculable

For dimensional scale scores, Psychiatry patients had highest mean values of both Hamilton depression (HDRS) and anxiety (HARS) rating scales. The respective mean scores for HDRS were 17.5 (7.6 SD) in Psychiatry, 16.5 (7.3 SD) in Medicine, 14.5 (8.2 SD) in Dermatology, and 12.4 (8.2 SD) in Ayurved. Mean HARS scores were 14.1 (6.9 SD) in Psychiatry, 13.7 (6.5 SD) in Medicine, 10.8 (6.2 SD) in Dermatology, and 10.7 (6.4 SD) in Ayurved. Differences for both were highly significant ($P < 0.001$, Kruskal Wallis) across clinics [Figure 8], indicating the magnitude of SCL-90+ subscale scores in the four clinics, shows that for all subscales except somatization, patients in Psychiatry had the highest mean values. All subscale scores were the lowest for Ayurved clinic patients.

Figure 8: Distribution of Mean SCL-90 (enhanced) Subscale Scores



3.6 Discussion

Though fatigue and weakness are universal as symptoms, various disorders of biomedically unexplained fatigue and weakness, such as CFS and neurasthenia have poor diagnostic concordance (8). These categories are rarely used in practice in Indian setting, and rarely researched, perhaps because these categories fail to provide adequate guidelines for clinical management. Each of these categories has additional criteria beyond the essential common features of a fatiguing disorder, viz., severe fatigue causing disability without obvious biomedical basis. These additional criteria make these categories useful in the setting where the condition was formulated, but these categories lose their sensitivity in other cultures. Cross-cultural differences in disorders of fatigue and weakness are important. Broad and inclusive criteria with focus on clinical significance alone were used in this study to screen patients from four different clinics to circumvent the problem of culture bound syndromes. The four clinics represent distinct medical, psychiatric, and cultural orientations to the experience of illness, its explanations, and preferred help. Present study describes the salient biomedical and psychiatric differences among patients attending four different clinics with different cultural orientations toward health and disease. Considering the range of variation with respect to clinical features, biomedical status, and psychopathology, experience in the study supports the validity of applying the formulation of NSD to this sample and others.

It is notable that patients could be identified with a common case definition in each of the four clinics. Study patients meeting inclusion criteria for core features of NSDs were shown to have differences in biomedical and psychopathologic markers across the four clinics.

3.6.1 Endemic anemia

Study patients were not more anemic than the controls, a finding similar to the one reported by Patel *et al* (23). But Indian patients are more anemic as compared to their counterparts in other parts of the world. Thus, “weakness,” which is not emphasized in Western definitions of these disorders, may be partly explained by anemia of Indian patients.

Nearly all male controls (95%) and 74% of male patients had < 14 g/dl of hemoglobin, and almost 80% of both female patients and controls had it < 12 g/dl. These international standards are rarely followed in clinical practice in India, where treatment is started only when hemoglobin is < 10.5 g/dl in the local setting. Patel and colleagues in their community study of Indian women also take the cut-off as 11 g/dl for non-pregnant women (23). Other population studies have shown that 50% women and 44% men have anemia in India (21,22).

The study sample showed comparable values of hemoglobin with controls. It is to the credit of clinicians in busy outpatient clinics with unsatisfactory doctor patient ratio and insufficient time and resources for investigations that there was no significant difference between mean values for hemoglobin and BMI of patients and controls. This indicated that they had identified patients with no biomedical basis correctly based on clinical evaluation. It is noteworthy that BMI and CAMA are not done routinely in the clinics of the hospital where study was conducted. The differences in the values of CAMA between patients and controls show a deficiency in the assessment of patients with NSDs regarding biomedical basis of their complaints. Although it is not the most sophisticated investigation for deficiency of muscle mass (sarcopenia), CAMA is a simple, inexpensive, and proven indicator of nutritional status that should be used to screen and identify patients with nutritional basis for their NSDs in public hospitals facilitating further work-up.

3.6.2 Distinctive CAMA

Based on the inclusion criteria, there should have been few differences in biomedical markers between cases and controls. This was true for anemia, but not for CAMA. CAMA was significantly higher in controls. Mean values of CAMA in urban slum dwellers more than 50 years of age from Mumbai were 35.3 sq cm for men and 27.8 sq cm for women (32). Our study patients’

values of 32.04 sq cm for men and 24.52 sq cm for women are close to these Indian norms. Having sufficiently ruled out medical causes, undernutrition, or lack of activity (or both) could yield low values on anthropometric measurements. Sarcopenia detected in study patients may be partly explained by more female patients and the younger age of male patients from Dermatology (as is endorsed by findings from multivariate analyses mentioned above), or from their impaired work capacity, which was an inclusion criterion. Less activity is also known to be a cause of lower CAMA (32-34). Their self-perceived health also was poor.

Deconditioning is an important perpetuating factor for complaints of fatigue, and also important in poor compliance with therapeutic suggestions regarding activity.

Sarcopenia may be another explanation for the complaints of weakness in our study patients. It is rarely a focus of inquiry in Western definitions of disorders of fatigue. Further studies on sarcopenia will be important for developing effective treatment protocols.

3.6.3 Gender issues in NSDs

Undernutrition of women is not only a biologic issue, but also a problem that requires attention to sociocultural determinants arising from gender-based vulnerability of women. Their higher prevalence in women is comparable with findings from other studies (3).

3.6.4 NSDs as distinct from depression: corroboration from controls

Controls were found to be dissimilar from patients regarding CAMA. It strengthens the argument that NSDs are not just unremitted or subclinical depression or other psychiatric morbidity, but a category in their own right with distinctive anthropometric features. These findings need to be studied in larger samples, as it was not possible to recruit more controls in a setting that largely treats severe mental morbidity. Also, more sophisticated investigations of lower CAMA in patients with NSDs are necessary to examine the correlation between sarcopenia and prominence of weakness in clinical presentation.

3.6.5 Frequency and multiplicity of psychiatric diagnoses

Preponderance of anxiety and weakness in this study contrasts with that of fatigue and depression in Western studies. It is a principal cross-cultural difference for disorders that comprise the spectrum of NSDs, such as CFS and neurasthenia. Patients with clinically significant psychopathology, who did not meet criteria for enduring DSM-IV disorders were diagnosed with non-

specific subtypes of somatoform, anxiety, or depressive disorders, or with adjustment disorders. Other studies have shown that for patients with medically unexplained symptoms (15) or CFS (4,14), the frequency of depression is greater, followed by anxiety and somatoform disorders. The majority of patients in this study received diagnoses of anxiety disorders or somatoform disorders, but few received depressive diagnoses, distinctive to urban Indian patients. Distinct profiles of psychiatric diagnoses across clinics indicate a preponderance of nonspecific anxiety and somatoform disorders in Dermatology and Ayurved clinics. For example, undifferentiated somatoform disorder (35.2%) and anxiety disorder NOS (19.0%) are more frequent in the Dermatology and Ayurved clinics. Prevalence of unexplained fatigue or weakness was also shown to be more in these two clinics than the Psychiatry and Medicine clinics, indicating important differences in the way these symptoms are perceived and presented in these clinics. This warrants a detailed assessment of NSDs in these clinics. It is possible that the theme of psychiatric suffering in these clinics is different from the other clinics, and based more on cultural tenets. Quality of experience in depression needs to be explored, as stressful life events including victimization are known to be associated with NSDs. Adjustment disorders are related to real-life stresses that are reported most by medicine clinic patients, largely women. Financial stresses are common perhaps linked with nutritional problems.

These findings show that NSDs are not a subset of psychiatric morbidity, but rather nonspecific psychiatric diagnoses are an associated feature of NSDs. This argument is in accordance with that of Henningsen (35) indicating the independent nature of functional somatic syndromes. High incidence of anxiety, minor depression, and pain disorder in the Medicine clinic highlights the need to manage untreated emotional problems of medical outpatients. Additionally, heterogeneity of NSDs and need for more holistic treatment approach are also highlighted in the landmark study by Thieme et al (36) examining relationship between somatic and psychological variables in fibromyalgia.

The analysis of mean index of nutrition in each clinic and pooled sample shows that minor depressive disorder, social phobia, anxiety disorder NOS, and undifferentiated somatoform disorder generally indicated no major nutritional problems for the patients. Generalized anxiety disorder and adjustment disorder on the other hand indicated poorer nutritional status implying the need for investigation and more support for these patients.

Significant differences in the subcategories and magnitudes of depression and anxiety across clinics may indicate why these patients with similar symptoms seek help from different providers. For example, those with high-so-

matic anxiety may be attending medicine clinic, while those with high depression attend psychiatry clinic. Cultural physiologic beliefs may generate nonspecific psychiatric diagnoses, which are more frequent among patients in Dermatology and Ayurved clinics. Overall, the categorical diagnoses are of limited utility in managing these patients. SCL provides dimensional measurement, which is congruent with their degree of distress as indicated by Hamilton scores across clinics. Dimensional measurement of psychopathology may be a useful and complementary approach in professional assessments that will help patients understand, acknowledge, and monitor their own symptoms. Patel *et al* (23) also used nonpsychotic psychiatric morbidity scores as indicators of psychopathology; this approach is analogous to the use of SCL 90. Somatization was the strongest predictor of both new and chronic fatigue with unknown cause as reported in the Epidemiological Catchment Area (ECA) study (37). The present study of patients with NSDs corroborates these findings in Indian culture. Distinctive biomedical markers and psychopathology in the four clinics further highlighted the value of both cross-cultural and intra-cultural study of this common clinical problem from a biopsychosocial perspective. Idiographic formulation (38) is the assessment complementary to the professional assessments, such as SCID, Hamilton, and SCL-90. Such formulations could be obtained by cultural epidemiological methods for qualitative and quantitative measurements. Such research will contribute to the management of this vexing yet common clinical problem.

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4.1 Abstract

Background: Clinically significant fatigue or weakness is a common but understudied clinical problem in India. The applicability and relevance of Western clinical criteria in this setting are not studied. Alternative criteria sets used in different clinical contexts suggest a range of conditions constituting neurasthenia spectrum disorders (NSDs). We therefore aimed to determine frequency of patients with these complaints in four specialty outpatient clinics of an urban general hospital. We compared the concordance of four diagnostic criteria sets of fatigue disorders among the same patients.

Methods: Patients from the clinics of Psychiatry, Medicine, Dermatology, and Ayurved were screened for clinically significant fatigue or weakness and assessed for CFS, ICD-10 neurasthenia, DSM-IV draft criteria for neurasthenia, and CCMD-2 neurasthenia.

Results: For 352 patients, sensitivity of CDC criteria for CFS (13.4%) was poorest. CFS was most frequent in the Medicine clinic. CCMD-2 criteria were the most frequently met (77.6%) with no significant difference across clinics. Two-way concordance of neurasthenia categories was no better than fair ($\kappa=0.4$) and few patients (8.0%) met criteria for all four categories.

Discussion: Four NSD criteria sets identified different clinical subgroups. CFS, considering fatigue and ignoring weakness, was least relevant for identifying NSD patients in these clinics. Poor concordance among the four diagnostic systems studied indicates the need for reviewing the nosology of these disorders. Focus on clinical significance alone is likely to avoid the discordant confusion arising from cross-cultural differences.

Key words: neurasthenia - fatigue disorders - culture-bound syndromes - diagnostic criteria - diagnostic sensitivities

4.2 Introduction

Fatigue and weakness are common experiences in daily life that also present frequently as functional somatic syndromes (1) (2). When severe and persistent, unexplained fatigue and weakness may constitute a clinical disorder (3) (4) (5). For patients, unexplained clinically significant fatigue or weakness is a source of suffering and uncertainty, and may limit productivity, potentially resulting in economic difficulties for the afflicted and their families. For the clinician, these disorders are difficult to diagnose and may strain health system resources.

The range of criteria sets suggests various formulations that collectively may be regarded as neurasthenia spectrum disorders (NSDs).

Existing nosologies have formulated disorders of medically unexplained

clinically significant fatigue or weakness in various ways. Among the criteria sets that have been used are chronic fatigue syndrome (CFS) (6) (7), neurasthenia as defined by the ICD-10 (8), neurasthenia as defined by the Chinese Classification of Mental Disorders (CCMD-2, CCMD-3) (9), and neurasthenia as proposed and rejected by DSM-IV (10). In their review, Prins and colleagues (4) identified severe fatigue causing disability with no organic basis as the most common feature of the various definitions of disorders of fatigue. Fatigue is defined as extreme tiredness after exertion, or a reduction in the efficiency of a muscle, organ, etc. after prolonged activity; while weakness is a state of being deficient in strength or vigor, i.e. even before an activity is begun. This fine semantic difference is not always appreciated, and often the terms are used interchangeably. Fatigue is up to ten times commoner than weakness, as reported from Western studies (11).

ICD-10 and DSM-IV diagnostic criteria are also sensitive to fatigue as the characteristic symptom. However, in some accounts of neurasthenia (CCMD-2) and a comparable culture-bound disorder (Dhat syndrome) (12), weakness as a characteristic symptom is more commonly considered. In Indian setting, weakness is often used idiomatically to convey the lack of sexual prowess. Fatigue is translated into Marathi-the local language where this study was conducted-as thakwaa, while weakness as ashaktapanaa. Emphasis on weakness in some of these conditions, which share similar features, raises questions about the coherence of various diagnostic formulations. Such discrepancies suggest the need for adequate, contemporary, and cross-culturally valid diagnostic criteria and to identify whether the condition is coherent in its various diagnostic formulations.

In India, clinical evidence suggests that these disorders are common. A prevalence of 5.0% was found among the four specialty clinics, with more prevalence among the Dermatology and Ayurved clinics than the Psychiatry and Medicine clinics (13). A community survey of 2,494 consenting women in Goa, India, found that 12.1% had persistent fatigue over at least 6 months, and a WHO disability assessment found poorer scores for these women compared with controls (14). These problems are likely to increase as an important health issue within the context of the epidemiological health transition and urbanization (15) (16). In urban hospitals where patients may choose among specialty outpatient clinics, the reasons for selecting one or another for conditions with similar clinical symptomatology are unclear. The clinical significance, and the relevance, relative sensitivity and concordance of these diagnostic criteria sets for disorders of fatigue or weakness have not been studied and require clarification.

4.3 Objectives

This study aimed to determine the frequency of these disorders of fatigue or weakness and concordance of alternative diagnostic criteria sets of these disorders, namely, CFS and neurasthenia as defined by ICD-10, CCMD-2, and DSM-IV (draft) criteria among patients with clinically significant fatigue or weakness. We also aimed to identify crosscutting and distinctive features of these conditions in four outpatient clinics, namely, Psychiatry, Medicine, Dermatology, and Ayurved (the traditional Hindu system of medicine) of an urban government hospital in India. Care at the Ayurved clinic is based on the traditional Hindu system of medicine for which theories of humoral balance with reference to cultural physiological concepts of semen (dhatu), material substance (prakriti), and environmental conditions are of central importance. It is often valued by patients for its holistic approach, non-invasive methods, and expectations of fewer side effects (17). The Dermatology clinic also treats patients with sexually transmitted diseases, and as a result, may be stigmatized. The Medicine clinic operates according to conventional Western biomedicine, and the Psychiatry clinic largely treats psychotic patients and those with mood disorders.

4.4 Methods

4.4.1 Four study clinics*Patients with NSDs are often seen in or referred to various specialty clinics. The four representative clinics are each associated with various problems and expectations, as described above.*

4.4.2 Instruments: Screening instrument:

We formulated criteria to identify unexplained clinically significant fatigue or weakness, as an operationalization for screening of NSDs based on shared features of relevant existing diagnostic formulations and clinical features. These criteria are more 'proximal', in the sense that they depend on spontaneous responses of patients to open-ended rather than probed questions (Appendix 1A). Patients were screened according to the following criteria: (a) spontaneously reported complaints of fatigue or weakness among their presenting complaints, (b) duration of six months or more, (c) distressed enough to seek treatment for it, (d) considerable work impairment as reported subjectively, and (e) no identified bio-medical basis from history, physical findings, and clinically indicated laboratory studies, after evaluation by a qualified specialist in internal medicine. All patients who fulfilled criteria (a) through (d) underwent a laboratory check-up including hemogram, blood sugar level,

blood urea level, urine and stool examinations. The collaborating internist physician examined the patient, assessed lab reports (Appendix 2A) and judged whether their symptoms of fatigue and/or weakness were of organic origin. He advised additional tests for patients if required. Such patients subsequently returned to the physician, and they were recruited in the study only if the physician concluded that their fatigue or weakness was functional in origin.

4.4.3 Sample

Patients in the four study clinics between the ages of 17 and 65 who screened positive for clinically significant fatigue or weakness and were willing and able to complete the interview were recruited into the study. Those with overt psychotic or substance use disorders were excluded from the study by using the SCID (Structured Clinical Interview for DSM-IV) screening module.

4.4.4 Data collection

Trained research assistants screened the outpatients from the four study clinics. In an earlier phase of this research to estimate prevalence of clinically significant fatigue or weakness (13), screening criteria were administered to consecutive patients from four clinics considering the daily attendance of these clinics after a pilot. Between 21% (Medicine Clinic) and 37% of patients screened (Ayurved Clinic) had no biomedical basis (26% of the pooled sample). Those excluded because of an identified biomedical basis typically had systemic diseases associated with the particular clinic they attended, such as hypertension and diabetes in the medical clinic; eczema, scabies, and leprosy in the dermatology clinic, and so forth. In the second phase, on each working day the screening went on until two patients could be recruited for detailed research interviews. Each patient required about 3-5 h for research interviews; therefore only two patients could be interviewed a day. After the clinical and laboratory assessments and formal written consent, biometric assessments of body mass index and corrected arm muscle area were conducted. Research interviews included EMIC interview (18); depression, anxiety, and somatoform disorder modules of SCID (19); Hamilton depression and anxiety rating scales (20); Symptom Check List-90 (SCL-90) (21); and diagnostic interviews for CFS and Neurasthenia (Appendix 1B-E). Patients with anxiety and depressive disorders were included, unless excluded because of psychotic features. The diagnostic interview instruments for CFS and Neurasthenia (ICD-10 and DSM-IV) were integrated to avoid repetition and enhance coherence of the assessment (Appendix 2C). A diagnostic interview for

CCMD-2 neurasthenia (Appendix 2B) was conducted separately. All the interview instruments were translated and validated using appropriate methods of translation, back-translation, and pilot testing. This paper presents the findings of the interviews for CFS and Neurasthenia according to ICD-10, CCMD-2, and DSM-IV (proposed draft).

4.4.5 Analysis

Data were entered in Epi Info 6.04, and concordance was computed using a Kappa statistic for agreement of the four alternative criteria sets (viz., CDC-CFS, Neurasthenia by ICD-10, DSM-IV (draft), and CCMD-2). Overall concordance was assessed in a four-way comparison of diagnoses based on four criteria sets applied by a single rater. The approach is analogous to the assessment of inter-rater agreement with the Kappa statistic. If four raters had applied a single instrument, e.g. CFS, the inter-rater agreement could be computed using Fleiss's method (22). Here, a single rater administered the four instruments, viz., CFS, Neurasthenia (ICD-10), Neurasthenia (DSMIV, draft), and Neurasthenia (CCMD-2). Thus, the four instruments based on different criteria sets are analogous to four raters. Using the same method, we get the inter-instrument agreement, i.e., the overall concordance. The congruence of distribution of the diagnoses with each of these four criteria sets in each of the four clinics and for the pooled sample was assessed with the Cochran Q-statistic, a multi-way generalization of the McNemar test.

4.5 Results

4.5.1 Sample characteristics

A total of 352 patients (with a mean age 34.3 years) were studied from the four clinics. Eighty-three patients were studied in Psychiatry, 98 patients in Medicine, 85 patients in Dermatology, and 86 patients in Ayurved. Most were literate, Maharashtrian urban residents (67%), Hindu (76%), employed (60%), and earned an income of less than Rs. 4,000 per month (68%). The pooled sample had more women (63.8%), mainly housewives, and the percentage of women was 88% in Medicine, 49% in Psychiatry, 47% in Dermatology, and 67% in Ayurved. Patients in the Ayurved clinic were older (mean age 37.7 years), and in Dermatology they were younger (mean age 31.5 years).

4.5.2 Frequencies of the four diagnoses

Table 4.1 presents the percentage of patients diagnosed with each disorder, in each of the four clinics. CFS was least frequently diagnosed in all four clinics; its frequency in the pooled sample was 13.4%. The largest percentage

of patients with both CFS and ICD-10 neurasthenia were diagnosed in Medicine and Psychiatry clinics. The frequency of both of these conditions varied across clinics, but the frequencies of the CCMD2 and DSM-IV draft neurasthenia were similar across clinics, and they were more frequent than the other two conditions.

Table 4.1: NSD core criteria patients diagnosed with four categories (%) showing extent of observed agreement

NSD diagnoses	Psychiatry (n=83)	Medicine (n=98)	Dermatology (n=85)	Ayurved (n=86)	Total (N=352)	P-value (Chi Sq)
CCMD-2 NT	80.7	71.4	78.8	80.2	77.6	0.388
ICD-10 NT	27.7	34.7	23.5	9.3	24.1	0.001
CDC CFS	18.1	21.4	7.1	5.8	13.4	0.003
DSM-IV draft NT	63.9	49.0	58.8	53.5	56.0	0.209
No Diagnosis	14.5	19.4	16.5	15.1	16.5	0.810
Cochran's Q^a	171.38	174.5	196.91	223.3	755.29	
and P value	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	

NT = Neurasthenia.

^a Cochran's Q statistic for comparison of diagnoses according to four criteria sets in each clinic. Cochran's Q follows Chi Square distribution with degrees of freedom = number of categories - 1. For 5% significance level, Q must exceed 9.49, and for 0.1% significance level it must exceed 18.47.

4.5.3 Consistency of the four diagnoses

Among 86 patients in the Ayurved clinic, only 6% were identified as having CFS, 9% were identified as having neurasthenia according to ICD-10 criteria, 54% met DSM-IV criteria for neurasthenia, and 80% met criteria for neurasthenia according to the CCMD. Cochran's Q test indicated that consistency of the diagnoses in each clinic differed significantly ($p < 0.001$) in all four clinics individually, as well as in the pooled sample (Table 4.1).

4.5.4 Pairwise concordance between different diagnoses

The best pair-wise concordance was for ICD-10 and DSM-IV draft criteria, for ICD-10 and CFS criteria, and for DSM-IV draft and CCMD-2, but agreement for each of these was only fair (Table 4.2). Agreement for other pair-wise comparisons was poor. It was poorest for CDC and CCMD-2 criteria.

Table 4.2: Agreement among alternative diagnostic categories for NSDs (Pairwise comparisons)

Agreement between		K	95% C.I.	
			Lower Limit	Upper Limit
Neurasthenia (ICD-10)	CFS (CDC)	0.32	0.23	0.42
Neurasthenia (ICD-10)	Neurasthenia (DSM-IV, draft)	0.4	0.33	0.48
Neurasthenia (ICD-10)	Neurasthenia (CCMD-2)	0.09	0.030	0.15
CFS (CDC)	Neurasthenia (DSM-IV, draft)	0.16	0.1	0.23
CFS (CDC)	Neurasthenia (CCMD-2)	0.08	0.04	0.12
Neurasthenia (DSM-IV, draft)	Neurasthenia (CCMD-2)	0.32	0.23	0.41

4.5.5 Distribution of the four diagnoses

Only 8.0% of the pooled sample had positive diagnoses for all four conditions (Table 4.3). The maximum proportion of patients meeting all four diagnoses was in the Medicine clinic (15.3%), followed by Psychiatry (10.8%). Only 2.4% and 2.3% of patients from the Dermatology and Ayurved clinics respectively, could fulfill criteria for all four conditions. Sixteen and a half percent of patients met criteria for three diagnoses in the pooled sample. Only 7.0% in the Ayurved clinic and between 17.3% and 22.4% of patients in the other three clinics met criteria for three diagnoses. Among the pooled sample, 30.7% of patients met criteria for any two diagnoses. Ayurved clinic patients were the most common in this group (43.0%), while Medicine clinic patients were the least common (15.3%). Among the pooled sample, 28.4% met only one diagnosis. Sixteen and a half percent of patients from the pooled sample did not meet criteria for CFS or Neurasthenia. They ranged from 14.5% to 19.4% across clinics, and the highest number of patients was from the Medicine clinic.

Table 4.3: Four-way concordance of NSD criteria sets

Row	ICD-10	CDC-CFS	DSM-IV	CCMD-2	Concord. Diagno.	FREQUENCY									
						Psychiatry		Medicine		Dermatology		Ayurved		Total	
						n=83		n=98		n=85		n=86		N=352	
						No.	%	No.	%	No.	%	No.	%	No.	%
0	-	-	-	-	0	12	14.5	19	19.4	14	16.5	13	15.1	58	16.5
1.1	+	-	-	-	1	1	1.2	1	1	0	0	0	0	2	0.6
1.2	-	+	-	-		0	0	1	1	0	0	0	0	1	0.3
1.3	-	-	+	-		2	2.4	4	4.1	2	2.4	3	3.5	11	3.1
1.4	-	-	-	+		15	18.1	26	26.5	20	23.5	25	29.1	86	24.4
2.1	+	+	-	-	2	0	0	0	0	0	0	0	0	0	0
2.2	+	-	+	-		1	1.2	3	3.1	2	2.4	1	1.2	7	2
2.3	+	-	-	+		2	2.4	2	2	0	0	0	0	4	1.1
2.4	-	+	+	-		0	0	0	0	0	0	0	0	0	0
2.5	-	-	+	+		25	30.1	9	9.2	26	30.6	34	39.5	94	26.7
2.6	-	+	-	+		0	0	1	1	0	0	2	2.3	3	0.9
3.1	+	+	+	-	3	0	0	0	0	0	0	0	0	0	0
3.2	+	+	-	+		0	0	0	0	1	1.2	0	0	1	0.3
3.3	+	-	+	+		10	12	13	13.3	15	17.6	5	5.8	43	12.2
3.4	-	+	+	+		6	7.2	4	4.1	3	3.5	1	1.2	14	4
4	+	+	+	+	4	9	10.8	15	15.3	2	2.4	2	2.3	28	8

Table 4.4 shows Kappa statistic for four-way concordance of different criteria sets. The agreement is 0.04 in the Psychiatry clinic and 0.121 in Medicine. In the Dermatology and Ayurved clinics, the Kappa values are negative. The agreement for the entire sample was 0.02 when screening criteria were compared with other diagnostic categories.

Table 4.4: Kappa statistic for four-way concordance of NSD criteria sets

Kappa	Psychiatry n=83	Medicine n=98	Dermatology n=85	Ayurved n=86	Total N=352
Estimate	0.040	0.121	-0.022	-0.084	0.020
Std error	0.038	0.033	0.035	0.034	0.017
Lower 95% CI	-0.035	0.055	-0.091	-0.151	-0.014
Upper 95% CI	0.115	0.86	0.047	-0.017	0.054

Four-way Kappa computed according to method of Fleiss (1971).

When only the first criterion of the four diagnoses was considered, 88.4% patients (n = 311) responded positively (Table 4.5). Subsequent qualifying criteria led to exclusion of patients until each of the different diagnoses was ultimately reached. The first criterion describing the nature of fatiguing illness in the definition of CFS was present among 54.8% of study patients. Only 14.8% of patients were retained after the neuropsychological symptom clause, but before the disability criterion was applied.

Table 4.5: Attrition of patients during the diagnoses of NSDs from the first descriptive clause to final diagnosis

Criteria	Diagnostic system				Any diagnosis (N = 352)
	CDC	DSM-IV	ICD-10	CCMD-2	
A	193	219	94	278	311 88.35%
A+B	52	203	85	278	
A+B+C	49	199		277	
A+B+C+D	47	197			
Final Diagnosis	47	197	85	273	292 82.95%

Legend :

- Criterion A is the descriptive criterion in all formulations.
- Criteria B and C specify the severity, course, and additional features.
- Criterion D is the exclusionary clause listing organic conditions to be ruled out.
- “-” indicates absence of the criterion in concerned diagnostic formulation

When the Ayurved clinic was compared with the other clinics, sleep disturbance and dyspepsia as symptoms of neurasthenia were uniformly distributed across the clinics ($\div 2 = 2.4$ and 0 , $df = 1$, and $p = 0.1213$ and 0.9893 , respectively). However, inability to relax and dizziness were reported far less by Ayurved patients ($\div 2 = 10.11$ and 14.39 , $df = 1$, $p = 0.0015$ and 0.0002 , respectively). Further analysis shows that inability to relax and dizziness were significantly more frequent among patients in Dermatology as compared to patients in the Ayurved clinic ($\div 2 = 7.4$ and 4.48 , $p = 0.0065$, and 0.0344 respectively, for $df = 1$).

4.6 Discussion

Unexplained clinically significant fatigue or weakness occurs in the context of different psychiatric and somatic illnesses. Various clinical explanations and cultural meanings are offered to explain them. Accordingly, different medical and non-medical help seeking are tried by patients with these symptoms. Because different nosological systems provide diagnostic categories of fatiguing disorders with overlapping features across the globe, it is worthwhile to consider an inclusive definition that encompasses syndromes of CFS and Neurasthenia. We have designated these disorders collectively as NSDs. The merit of formulating Neurasthenia as a spectrum of clinical disorders was previously acknowledged from cross-cultural studies in China (23) advocating the kind of elaboration undertaken in our study. Other authors have also used this term. A study of environmental influences on astronauts in space also referred to NSDs: "Neurasthenia-spectrum disorders include a range of psychosomatic features such as fatigue, weakness, pain, headaches, sleep disturbances, and heightened sensitivity to stimuli" (24).

The present study was the first to examine unexplained clinically significant fatigue or weakness as an operationalized formulation of NSDs. It is also one of the few studies outside of Europe, North America, and Australia where most of the research to date on fatiguing disorders has been conducted. We defined the screening criteria that included the essential common criteria of fatiguing disorders as pointed out by Prins et al (4). Thus, they were broadly inclusive and sensitive to presence of fatigue, but also considered weakness; and depended on spontaneously reported experience of symptoms rather than on responses elicited to probe questions unlike other instruments. Screening criteria also considered disability-as reported by work impairment, distress motivating help seeking, and where organicity was ruled out.

Thus, all patients included had clinically significant biomedically unexplained fatigue or weakness, in other words, core features of NSDs. By comparing the sensitivity and concordance of alternative diagnostic criteria sets among these patients, this study has established the poor match among the alternative categories, showing they do not constitute a single coherent clinical category. Additional features in each of these diagnostic categories are relevant to that category. These different formulations of fatigue or weakness were developed to ensure clinical significance in the practice setting, where they were developed.

Despite the fact that all the professional diagnostic criteria sets studied here are based on severe, disabling fatigue or weakness with no organic basis

(4), we found considerable differences in the sensitivity and concordance of the four diagnoses with reference to core symptoms of our screening instrument. Only 8% patients met all diagnoses. Similar to findings of Zhang (23), 17% patients in this study did not meet any diagnostic criteria under consideration.

4.6.1 Diagnostic sensitivity of NSDs and culture-bound syndromes

Several NSDs such as Chinese neurasthenia and Dhat syndrome are regarded as culture-bound syndromes. Dhat syndrome is a culture-specific presentation that typically includes core symptoms of NSDs, and it is common in South Asia. Contemporary debate in psychiatry has discussed the utility and validity of regarding dhat (25) and neurasthenia as culture-bound syndromes, raising questions about how diagnostic criteria determine a subsequent course of treatment. Sumathipala and colleagues (25) discuss the need for attending to true pathology for clinical guidance, rather than professional diagnostic criteria, and recommend the study of attributions and explanatory models. In a clinical setting like ours, where neither of the syndromes of NSDs is routinely used, these broad and inclusive criteria are thought to lead clinicians to consider at least a spectrum diagnosis enabling them to look into patient's attributions and explanatory models.

Varying sensitivity and poor concordance suggest a cultural patterning to NSDs. While the inclusion criteria employed in our screening instrument were based on criteria of clinical significance, the criteria set emphasizing the biomedical criteria (CFS) in its definition excluded the most patients. However, the criteria set developed in Asia (CCMD-2), which has a stronger focus on symptomatic weakness, was most sensitive to diagnosing fatigue or weakness disorders among Indian patients, perhaps reflecting the cultural closeness between the two. Chang et al (26) showed that ICD-10 has highly significant concordance with Shenjing Shuairuo (SJSR); but it is also reported that 84% of SJSR patients without prominent fatigue symptoms would be excluded by ICD-10 Neurasthenia. The poorest agreement between the CDC and CCMD-2 criteria is reflected in the lowest value of Kappa in pair-wise concordance (Table 4.2). This highlights the different polarities of biomedical and cultural diagnoses. Similarly, the best concordance between ICD and DSM draft criteria may be a result of efforts to harmonize the two systems of classification. Omitting weakness as a symptom may be one of the factors decreasing the cross-cultural validity of CFS and ICD-10 Neurasthenia. Additionally, Kappa value for agreement among NSDs in the clinics of Dermatology and Ayurved was negative indicating a less than chance agreement. Significant disagreement between the four categories and the core features

of NSDs indicates the distinct nature of patients' illness in comparison with the alternative categories.

4.6.2 Cultural patterning of weakness and anxiety as local symptoms of NSDs

Because all the study patients met criteria for NSD core features (the inclusion criteria), poor sensitivity of the other instruments such as CFS indicates that the Western formulations compare poorly with the broad inclusion criteria. By maintaining a focus on the symptom 'weakness,' the CCMD-2 is more effective in the Indian context, where humoral concepts of illness are prominent and closely linked to explanations of weakness as resulting from imbalance or the loss of essential body fluids. The concept of weakness and associated progressive intellectual, physical, and emotional deterioration due to loss of semen in males is based on local cultural physiological understanding of strength and vigor (dhat syndrome) (27).

Weakness and anxiety emerge as the prominent profile of eastern NSDs in contrast with fatigue and depression of Western syndromes. Cross-cultural variations signify that conditions describing the experience of illness in one culture may not be applicable as such in another, and risks diagnosis of non-specific categories that do not inform the appropriate course of clinical care. These findings indicate the variation in the cross-cultural validity of diagnostic systems, and provide an empirical demonstration of Kleinman's (28) concept of category fallacy. Consequently, all existing formulations of NSDs may be equivalent to culture-bound syndromes.

4.6.3 Explaining poor concordance

The clinical validity of neurasthenia in ICD-10 has also been questioned due to its substantial overlap with six other conditions from ICD-10 (29). A lack of concordance may also result from overemphasis of ancillary features, rather than core criteria, exemplified by neuropsychological features of CFS and neurotic symptoms in ICD-10 neurasthenia. This problem may account for cross-clinic differences in diagnoses of NSDs (Table 4.1). Both CDC and ICD criteria were met at significantly different rates across clinics. Fewer patients with core features of NSDs in Dermatology and Ayurved clinics met CDC criteria for CFS. ICD-10 criteria were more likely to be met in the Dermatology, but not in the Ayurved clinic. Ancillary features of NSDs that appear to explain these cross-clinic differences were 'inability to relax' and 'dizziness,' which were more frequently identified in Dermatology than the Ayurved clinic, explaining the different prevalence of ICD-10 Neurasthenia in these two clinics. This pattern of nonspecific anxiety symptoms also indicates that

higher rates of anxiety and depressive disorders in the Dermatology clinic may be expected. Our analysis is currently examining this hypothesis.

Although the category of neurasthenia was initially considered for inclusion in the draft of the DSM-IV, it was ultimately excluded from the official publication. A compelling argument for including neurasthenia among diagnostic options is to reduce dual and nonspecific (NOS) diagnoses (30). The current findings suggest fair agreement between the DSM-IV draft criteria and those of the CCMD-2, and moderate agreement with ICD-10 criteria. A need for radically revising the somatoform disorders in DSM-IV (31) had been suggested to improve the sensitivity and usefulness of somatoform diagnoses, and accepting DSM-IV draft criteria would have strengthened the cultural sensitivity of the DSM, a point that remains valid for consideration for DSM-V. Our study shows the value of using criteria that are inclusive, and which focus on clinical significance.

4.6.4 Limitations to the study

In this study, we used somewhat dated diagnostic criteria sets, including the CCMD-2. The currently updated CCMD-3, however, has become less sensitive to diagnosing NSD patients because it rules out neurasthenia for those with comorbid depression or anxiety [Y.F. Chen personal communication, 2004]. Similarly, the CFS definition of 1988 was used here, but even fewer patients would fulfill the criteria for the 1994 definition, as those with current major depressive episode with melancholic features would be disqualified from our sample. Also, if we consider only one symptom in addition to the first descriptive criterion in ICD neurasthenia, eight more patients would be diagnosed to have neurasthenia. The instruments were selected for use in a group of studies. Though superseded by newer criteria, the criteria sets we used nevertheless illustrate the impact of alternative values in formulating a workable and useful conceptualization of neurasthenia.

4.6.5 Implications

In the context of rapid urbanization and development, there is likely a need for more attention to NSDs among future patients in India, and this requires the formulation of appropriate criteria for a disorder that is currently infrequently used. In clinical practice, effective diagnostic systems should be sensitive to various cultural meanings and to the process of incorporating (32) or rejecting (33) a diagnostic category into practice. Value of sociosomatic model in the understanding and management of functional somatic syndromes highlighting the role of attributions and other cultural factors can be found in an excellent review by Ranjith and Mohan (12). Our

findings indicate the need to examine the nature of illness experience and meaning to determine whether and how these relate to professional diagnoses (25) (34), which may further elaborate the culture-specific features of these problems. Such research will also help to elaborate the identified cultural difference that includes weakness in operational clinical concepts of NSD for clinical practice in East Asia and South Asia. This study was undertaken in the broader context of research that will help to answer such questions.

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5. Cultural epidemiology of neurasthenia spectrum disorders in four general hospital outpatient clinics of urban Pune, India

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5.1 Abstract

Disorders emphasizing symptoms of fatigue and/or weakness, collectively termed Neurasthenia Spectrum Disorders (NSDs), typically emphasize a biological basis in the West and social origins in East Asia. In India, explanatory concepts are diverse. To clarify, 352 outpatients in Psychiatry, Medicine, Dermatology, and Ayurved clinics of an urban hospital were interviewed with a version of the Explanatory Model Interview Catalogue. Comparisons of categories and narratives of illness experience and meaning across clinics indicated both shared and distinctive features. Explanatory models of NSDs highlighted social distress, “tensions,” and both general and clinic-specific physical, psychological, and cultural ideas. Findings indicate the importance of social contexts and cultural meaning in explanatory models of neurasthenia, as well as the potential clinical relevance of the construct of Neurasthenia Spectrum Disorder.

Keywords: chronic fatigue syndrome, cultural epidemiology, cultural psychiatry, neurasthenia, India

5.2 Introduction

Various disorders of clinically significant, medically unexplained fatigue and weakness are recognized clinically and in research studies. Collectively, the range of fatigue conditions constitutes a spectrum that includes Chronic Fatigue Syndrome (CFS), various formulations of neurasthenia (NT), and other syndromes (e.g., fibromyalgia (FM) and myalgic encephalomyelitis) (1,2). These disorders may be regarded as rooted in the concept of Neurasthenia formulated by George Beard in 1869 (3). The justification for usefulness of grouping them under an overall construct of neurasthenia spectrum disorders (NSD) has been presented by Paralikar and colleagues (4).

The NSDs have both shared and distinctive clinical features (5). Differing accounts of the etiology of these conditions are a source of disagreement and confusion among doctors. The meaning of various NSDs also differs among patients, and illness experience, explanations, and help-seeking may vary both across and within cultures. Patients’ experiences and explanatory models may be associated with treatment preferences (6,7).

Lin, Lin, and Zheng (8) demonstrated the value of research in different cultures on cultural meaning and help-seeking for NSDs. Cultural differences in the experience and explanation of NSDs have been described for Euro-American and South Asian women experiencing everyday fatigue (9), unexplained chronic fatigue among patients in the UK and Brazil (10) and Chinese

immigrants in Toronto (11).

Community and clinical studies indicate the importance of NSDs in India. A community study in Goa reported a 12.1% prevalence of the symptom of chronic fatigue in women (12). A study in Pune, found 5.0% prevalence of NSDs among male and female patients in four clinics of a general hospital in Pune (Psychiatry, Medicine, Dermatology and Ayurved) (13). The effects of urbanization on increasing vulnerability to NSDs are reflected in popular cultural representations, such as newspaper articles, suggesting that the fast pace and high stress of city life may contribute to symptoms of NSDs (14). Dhat syndrome, a culture-bound condition characterized by loss of semen as the perceived cause with prominent symptoms of weakness or fatigue may be viewed as an NSD (15).

Research is needed to clarify the cultural diversity of Indian experience. Mapping cultural themes helps to formulate more useful diagnostic, psychosomatic, and psychotherapeutic concepts and approaches. Setting specific features of NSDs in India should contribute to cross-cultural research, and within-culture variance should help to explain access and treatment preferences in medically pluralistic clinical settings.

5.3 Objectives

This study aimed to examine clinical and cultural features of NSDs in urban India with a focus on illness explanatory models. It also examined and compared the cultural epidemiology of patients in four outpatient clinics of a referral hospital, identifying common and distinctive features that account for medical pluralism in use at various clinics of the hospital.

5.4 Methods

5.4.1 Setting

Pune is a metropolis in Western India about 160 km from Mumbai, and Marathi is the local vernacular language. The city is growing rapidly and is well known as a center for information technology, industry, and education, attracting students and workers from many parts of India. The study was conducted at the Sassoon Hospital in Pune, which offers a mix of primary care and referral services. It is a government hospital attached to BJ Medical College. Subsidized clinical services include 1,200 inpatient beds and outpatient services for the urban agglomeration and adjacent rural areas. Most patients are from low-income groups, and the hospital serves a mix of Hindus (the majority), Muslims and Buddhists.

The study was conducted in four outpatient clinics. The Dermatology clinic

treats patients with sexually transmitted diseases as well as dermatological problems. The Ayurved clinic operates according to the traditional Hindu system of medicine, based on concepts concerned with humoral balance of internal wind (vata), bile (pitta), and phlegm (kapha); cultural physiological concepts of semen (dhatu) and material substance (prakriti); and climate. Medical clinic operations conform to the mainstream Western biomedical model. The Psychiatry clinic largely treats patients with psychotic and mood disorders based on international standards.

5.4.2 Instruments

A screening instrument was designed to identify and recruit outpatients with NSDs, based on the prominence, impact, and duration of biomedically unexplained symptoms. Operational criteria focused on spontaneously reported fatigue or weakness lasting more than six months, and clinical significance based on diminished functional capacity or help seeking (13).

An Explanatory Model Interview Catalogue (EMIC) interview was developed to assess explanatory models of NSDs, with reference to illness-related experience, meaning, and behavior (16). The instrument was designed to elicit narratives and identify categories of patients' illness experience (patterns of distress, PD), its meaning (perceived causes, PC), and help-seeking behavior (HS) (17). Categories of PD, PC, HS and other variables were coded according to whether the respondent referred to it spontaneously or only after asking about the category directly. Coding also distinguished whether the account emphasized this category in the illness narrative or only mentioned it in passing. Each patient was interviewed by two trained research assistants, one who was responsible for maintaining the rapport and asking questions and the second who coded responses and maintained an account of the patients' narrative. The same raters interviewed patients in all four clinics.

5.4.3 Sampling and design

All patients of a designated outpatient clinic for that day were screened for core features of NSDs, that is, essential features of all of the conditions that comprise the spectrum, using the screening instrument. Further details concerning the screening instrument and sampling are presented in Paralikar and colleagues (4). Inclusion criteria were: age 17 to 65 years; spontaneously reported complaints of weakness or fatigue among the presenting complaints; self-reported functional impairment due to weakness or fatigue; and duration of symptoms of six months or more. Exclusion criteria were: overt psychotic or substance use disorder based on Structured Clinical Interview

for DSM IV (SCID-I) screening; a biological or medical basis to complaints of weakness or fatigue after assessment by an internist based on clinical history, physical examination, and laboratory studies; and inability or unwillingness to provide informed consent. An EMIC interview was conducted for all patients recruited into the study. Clinic prevalence (13), biomedical and nutritional studies, and psychiatric assessment with standard instruments (SCID, Hamilton scales for depression and anxiety, and SCL) have been reported (18), as well as diagnostic concordance of various NSDs (4).

5.4.4 Data analysis

Categorical and numeric data were double-entered in Epi Info version 6.04d. Narrative data were managed and analyzed in MAXqda. Content was thematically coded with reference to questions of the EMIC interview after formatting for import with automatic coding. Selection variables were imported from the quantitative data set into MAXqda, as needed.

Analysis of coded EMIC interview data examined the frequency and prominence of reported categories. Prominence is a derived variable which indicates not only how many patients acknowledge a PD or PC but also its subjective importance. It is based on two considerations, the style of reporting (4=emphasized spontaneously, 3=emphasized after probing, 2=mentioned spontaneously, 1=mentioned after probing, 0=not reported) and whether a response category was identified as most troubling PD or most important PC (5=most troubling/important, 0=Not most troubling/important). Prominence values are the sum of these two considerations and range from 0 to 9. The prominence analysis for each category of PD and PC provides a single variable for each category to facilitate comparison across clinics, taking information into account of how a category was reported and whether it was regarded as the single most significant by the respondent (17,19).

Categories of PD and PC representing aspects of an overarching concept were also grouped for analysis. The strategy for grouping PD variables is indicated in Table 5.1. Data for PCs were further reduced into four supergroups: Biological, Psychological, Social and Cultural, consistent with the strategy of Cho and colleagues (10). Biological causes include those related to diet, nutrition, poor health habits, weakness, overwork, sexual-reproductive, and also contamination or environmental pollution. Psychological causes are predominantly worries and “tensions.” Social causes cover the marital, interpersonal, and various stresses or losses. Cultural causes include semen loss, beliefs about the constructs of internal heat, wind, bile etc., and also beliefs in Karma (deeds in past life influencing current suffering or otherwise). The strategy for mapping each PC coded category into groups and supergroups is

indicated in Table 5.3.

Comparisons of categories, groups and supergroups across clinics were based on the prominence ranking of categories, using a Kruskal-Wallis test for nonparametric data using SAS (Tables 5.2, 5.4 and 5.5). Tables 5.2 and 5.4, which compare prominence, also indicate the frequency of each reported category. Table 5.6 indicates the comparison of frequencies of past help seeking options across clinics using a Chi square test.

5.5 Results

5.5.1 Sample

A total of 352 patients (mean age 34.3 years, SD 10.3 years) met study criteria in the four hospital outpatient clinics of Psychiatry, Medicine, Dermatology, and Ayurved of Sassoon Hospital. Owing to limited operations of the Ayurved outpatient department during the study period, 60 additional patients were recruited from the Seth Tarachand Ramnath Hospital, which provides exclusive treatment with Ayurved. The hospital serves a similar patient population in the same locale and also offers subsidized care. For the Dermatology clinic sample, an additional six patients were recruited from the nearby KEM Hospital, which is affiliated with the Sassoon Hospital and BJ Medical College. The Institutional Review Boards and sponsors were informed and approved.

Most patients were urban residents (67.0%), literate (86.0%), Hindu (76.1%), employed (53.1%), and had incomes less than Rs. 4,000 (USD 100) per month (68.2%). Patients in the Ayurved clinic were the oldest (mean age 37.7 years, SD 11.1), and in Dermatology they were the youngest (mean age 31.5 years, SD 10.8). The pooled sample had more women (63.8%), mainly housewives. Women constituted approximately half of the patient samples in Psychiatry (49.4%) and Dermatology (47.1%), and they were the majority in both the Medicine (87.8%) and Ayurved (67.4%) clinics.

5.5.2 Features of illness and help seeking

Mean duration of the illness as reported by patients at the time of interview varied across clinics ($H=8.565$, $p=.04$), and it was longest for Psychiatry clinic patients (55.7 months), and shortest for Medicine (32.5 months). In all four clinics, 25% of patients reported duration of less than 12 months, with median duration of 36 months for patients in Psychiatry and Dermatology, and 24 months in Medicine and Ayurved.

The average distance travelled to the first source of help was not significantly different across clinics, but the respective mean distance travelled to

the Sassoon Hospital study clinics did vary: 39 km for Dermatology, 28 km for Psychiatry, 22 km for Medicine, and 13 km for Ayurved ($H=13.422$, $p=.004$).

Patients were more likely to say that the cost of care was burdensome for first help from other providers (43.2%) than for treatment in any of the study clinics (24.4%). Ayurved patients were more likely to consider the study clinic cost burdensome (30.2%) and Medicine patients least likely (16.3%, $\text{Chi Sq}=8.03$, $\text{df}=3$, $p=.05$). Reported satisfaction with first help other than a Sassoon Hospital study clinic (60.5%) was less than satisfaction for the Sassoon Hospital study clinic (77.1%, $t=5.612$, $\text{df}=267$, $p<.01$). Both were similar across clinics. Many patients could not designate a single source of prior help that they regarded as “most useful” (74.1%), and less than half could identify a current preference of any kind for most useful help (46.9%). For many patients the course of prior help seeking was now regarded as long and tedious. Some patients also complained about the quality of current treatment in the study clinic. Nevertheless, most patients (75.6%) were optimistic that their condition could be cured or improved.

5.5.3 Referral and choice of study clinic

Referral by others was most frequently reported as a reason for choice of treatment in a particular clinic (36.4% in all clinics). It varied across clinics ($\text{Chi Sq}=51.39$; $\text{df}=3$, $p<.0001$), most frequently reported by patients in Psychiatry (67.5%), next most in Ayurved (37.2%) and Dermatology (22.4%), and least in Medicine (21.4%). Patients were least likely to come to Psychiatry on their own as self-referred (19.3%), compared with the other clinics collectively ($\text{Chi Sq}=19.53$, $\text{df}=1$, $p<.0001$): Ayurved 38.4%, Medicine 45.9% and Dermatology 55.3%.

Low cost was also a commonly reported reason for clinic-choice across clinics (33.8%) and varied across clinics ($\text{Chi Sq}=7.63$, $\text{df}=3$, $p=.05$), most frequent in Dermatology (42.4%) and least in Psychiatry (22.9%). Reputation of the clinic was reported by 33.2% of all patients and also varied across clinics ($\text{Chi Sq}=12.45$, $\text{df}=3$, $p=.006$), most for Medicine patients (45.9%) and least for the Psychiatry patients (21.7%). Other reasons reported less frequently included past experience in the clinic (18.8%) and convenience (11.9%). These did not vary across clinics.

5.5.4 Common features in patients' accounts

When asked to name their condition, most patients referred to it by various prominent symptoms (66.8%) rather than giving it a name. The most common name was weakness (ashaktapanna) (11.4%), but “no name” was a more frequent response (15.1%). Analysis of the terms for “fatigue”

(thakwaa) and “weakness” (ashaktapanna) in the narratives showed that “weakness” was used more frequently. Fatigue was mentioned 1,270 times identified in the narratives of 316 patients (mean respondent frequency=4.0) and weakness was mentioned 2,336 times in narratives by 342 patients (mean=6.8). Worries, frequently with reference to “tension,” were expressed as, “Who will look after me?” “What will happen in the future?” “How will I cope with life without any support?” The term “tension” occurred frequently in the narrative data set, 1,137 times by 247 patients (mean=4.6), with a similar proportion across clinics. Somatic complaints were reported most frequently and most often emphasized spontaneously in all clinics.

Although the condition is embedded in somatic complaints, the narratives emphasize the context of social stress and its emotional impact. Family responses that denied the legitimacy of a problem and interfered with potentially useful professional help were troubling: “They say that I am always making a drama. I have to work. . . don’t I? Therefore they say that I am working okay, so the illness is a drama.” A 20-year-old housewife explained that she must identify a cause of her problem for her in-laws; otherwise she might have to commit suicide.

Narratives were searched for terms related to victimization - namely victim, torture, beat, cheat, quarrel, assault, rape, molestation, homosexual experience, abuse, exploit, and misbehavior. Searches were conducted in the narratives using MAXqda, and the sentences containing any of these terms were read to ascertain that the meaning was not negated. Victimization was found to be quite frequent; 206 patients mentioned such terms in their narratives, with a total of 742 instances (mean respondent frequency=3.6). Women described victimization in marriage and oppressive household duties. In addition to marital and in-law problems, both child-care responsibilities and financial problems were reported frequently. Women also discussed fear of desertion and abandonment, and concerns about the priority of their children’s education. Alcoholic husbands, often physically abusive, were a common source of constant worry for them. Narratives of patients from the study sample showed that distress was often discussed in functional terms, that is, the ability of men to work in income-earning jobs and women to fulfill household responsibilities. The latter minimized their illness if they could work and their children and family were okay. Many felt unappreciated and they were troubled by a lack of emotional support; this was a recurring theme in women’s narratives.

Even though they feared giving blood, patients wanted a medical explanation and typically demanded more investigations. “They should take full photo of my whole body, and if there is any disease then they should give me

tablets and make me well,” a 38-year-old illiterate rural woman laborer in the Medicine clinic responded when asked if she had received the help she wanted for her problem. Referral from one clinic to another without desired investigations, diagnosis, and treatment were upsetting. A patient referred to psychiatry explained:

Yes, I feel that they should give me more powerful tablets or tonics. I did not like their sending me to No. 26 [the Psychiatry clinic]. Everyone there is mad. If I just happen to say something, they might give me “shock” without any reason.

Table 5.1: Categories of distress (individual and groups) reported by NSD study patients (%)

Category of Distress	Four Clinics (N = 352)
FATIGUE OR WEAKNESS	99.4
Fatigue	98.0
Weakness	96.0
OTHER SOMATIC COMPLAINTS*	95.5
SOCIAL OR WORK-RELATED PROBLEMS	92.6
Work problems	88.4
Social problems or stigma	36.1
EMOTIONAL DISTRESS (PSYCHOLOGICAL)	96.3
Anxiety	81.6
Lack of enthusiasm	74.1
Sadness	65.0
Lack of pleasure	51.4
Feeling worthless	50.3
Loneliness	48.6
Fears	37.5
BIOLOGICAL FUNCTIONS (VEGETATIVE)	92.1
Sleep problem	69.9
Appetite problem	69.1
Sexual functioning	52.0
PROBLEMS WITH THINKING (COGNITIVE)	66.8
OTHER (MISCELLANEOUS)	39.8

*Other somatic complaints excludes fatigue and weakness.
Grouped categories expressed in bold caps.

Prominent symptoms and problems reported in the four clinics are presented collectively with reference to group headings in Table 5.1. Although weakness or fatigue are cardinal features of the condition, a wide range of social, emotional and somatic symptoms were reported. Among psychological symptoms, lack of enthusiasm (*nirutsaha*) was more prominent than sadness, loneliness, worthlessness, fears, and anhedonia in all patients.

Clinic specific patterns of distress are indicated in Table 5.2. Psychiatry and Medicine clinic patients emphasized sadness, loneliness and worthlessness. No one in the Ayurved clinic spontaneously reported sadness. Ayurved patients were also lowest in the prominence of other emotional symptoms, such as anxiety, loneliness, and worthlessness. Fears were more frequently reported spontaneously in the Psychiatry and Medicine clinics, compared with Dermatology and Ayurved ($\chi^2=8.98$, $df=1$, $p<.01$). Somatic symptoms were most prominent for patients in Medicine, and nearly as high for Ayurved. Medicine patients also had relatively high levels of anxiety, typically related to concern about their somatic symptoms, rather than social issues. For example, one of the female patients from the Medicine clinic explained her fear of a heart attack:

I have chest pain and swelling on the left. I am afraid that there will be paralysis. My blood sugar will increase like my mother. My stomach also hurts on the left side. I am scared. If there is chest pain, will there be an attack?

When asked to identify the single most troubling category of distress, most patients identified somatic complaints (58.5%), especially in the Medicine clinic (71.4%) and least in Psychiatry (44.6%). Fatigue or weakness were infrequently identified as most troubling in the entire sample (11.4%), ranging from 8.1% in Ayurved to 14.5% in Psychiatry.

Table 5.2: Clinic-specific categories of distress reported by NSD study patients

Category of Distress	Psychiatry (P) (n=83)		Medicine (M) (n=98)		Dermatology (D) (n=85)		Ayurved (A) (n=86)		P-value Crude	P- value* Adj	Significance of female sex adjustment variable	Significance of age adjustment variable
	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported				
Somatic complaints	5.53	90.3	7.46	99.0	6.09	96.5	6.94	95.4	0.000	0.000	Pos***	NS
	(3.3)		(2.4)		(3.0)		(2.8)					
Other (miscellaneous)	1.81	43.4	1.07	24.5	2.45	54.1	1.80	39.5	0.002	0.000	Neg***	NS
	(2.4)		(2.2)		(2.9)		(2.8)					
Problems with thinking	2.46	79.5	1.33	59.2	1.67	64.7	1.54	65.1	0.002	0.005	NS	NS
	(2.3)		(1.4)		(1.8)		(1.7)					
Social relations-Stigma	1.49	50.7	0.76	30.6	0.78	29.4	0.80	34.9	0.004	0.010	NS	NS
	(1.9)		(1.6)		(1.5)		(1.3)					
Anxiety	2.81	80.8	2.68	90.8	2.37	81.2	2.02	72.1	0.005	0.005	Pos**	NS
	(2.3)		(1.6)		(2.1)		(1.7)					
Worthlessness	1.34	63.8	1.04	55.1	0.99	41.2	0.83	40.7	0.020	0.035	NS	NS
	(1.3)		(1.2)		(1.4)		(1.2)					
Sadness	1.55	72.2	1.52	67.3	1.39	70.6	1.06	50.0	0.026	0.017	NS	Neg**
	(1.4)		(1.4)		(1.3)		(1.3)					
Appetite problem	2.08	71.2	2.25	77.6	1.67	61.2	1.62	65.1	0.045	0.045	NS	Neg**
	(1.7)		(1.8)		(1.6)		(1.7)					
Loneliness	1.19	56.6	1.03	49.0	1.00	50.6	0.71	38.4	0.062	0.067	NS	Neg*
	(1.3)		(1.4)		(1.2)		(1.2)					

Kruskal-Wallis test for crude comparison of prominence.

Clinic differences were adjusted for sex (male baseline), age, and clinic (lowest rank score as baseline). Significance of sex and age in the adjustment with multiple regression on rank-ordered data are indicated as positive, negative or not-significant (NS); *P<.10, **P<.05, ***P<.001. Table does not include categories that are not significantly different across clinics.

5.5.5 Perceived causes

The frequency of diverse collections of perceived causes and group category headings under which they may be summarized are presented in Table 5.3. Physical causes were the most frequently reported group, but psychological, social and cultural causes were also common. Among individual coded categories, mental “tension” was the most frequently reported category, followed by weakness (ashaktapanna), fate, poor health habits and overwork-exertion. Sexual practices for men and reproductive functions for women (pregnancy and menstrual problems) as a group were reported by nearly half the sample. Only 8.4% of women attributed their NSD complaints to sexual experience, while 24.4% of men perceived it to be a cause (Chi Sq=16.98, $p < .001$). Other cultural categories of perceived cause were also identified by a substantial minority, including sorcery and spirits, internal “heat” and the Will-of-God.

Clinic-specific perceived causes are presented in Table 5.4. Categories are arranged in descending order of the significance of cross-clinic comparisons. The prominence of sex-related perceived causes, semen loss and masturbation, was highest in Dermatology and lowest in Medicine. Bereavement as a cause was relatively least prominent in Dermatology and higher at similar levels in the other clinics. The prominence of worries, interpersonal and personality problems were highest for patients in Psychiatry and also relatively high for Medicine. These causes were lowest for patients in Dermatology or Ayurved. Weakness and gynecological problems (menses, abortion or menopause) were relatively most prominent in Medicine and less in Dermatology and Psychiatry. Will-of-God was also relatively most prominent in Medicine but next most prominent in Psychiatry and equally low in Dermatology and Ayurved. Patients of Ayurved had the most diverse range of reported PCs, though typically at lower levels of prominence. Most of the cultural categories, however, were most prominent in this clinic, including wind, bile, contamination and karma. Pregnancy and childbirth was also most prominent in Ayurved, though at a level similar to Medicine.

When multiple comparisons were adjusted for sex - apart from gender-related causes (e.g., semen loss and pregnancy) - categories of Will-of-God, karma and injury-accident-surgery were higher for women. Environmental factors and sexual experience were more prominent perceived causes for men.

The comparison of the supergrouping of PCs across clinics is summarized in Table 5.5. This analysis shows that biological factors were most prominent PCs in the Medicine clinic, psychological factors highest in Psychiatry, and

cultural factors highest in Dermatology. From this analysis, cultural PCs for patients in Ayurved are similar to patients in Medicine, and Psychiatry patients similar to patients in Dermatology. Thus, medians for cultural supergroup are highest in Psychiatry and Dermatology clinics, and lowest in the other two clinics. Cultural causes were positively correlated with age in the adjusted model ($p=.02$). Although social factors had the highest value of prominence in Psychiatry ($p<.10$ after adjustment), they were relatively high and did not differ significantly across clinics. The adjusted analysis showed that biological factors were more prominent for men and psychological factors more prominent for women.

Table 5.3: Perceived cause categories reported by NSD study patients (%)

Perceived Cause	Four Clinics (N=352)	Supergroup category
PSYCHOLOGICAL	71.0	-
Worries, mental tension	68.5	P
Personality	30.1	P
PHYSICAL	91.8	-
Weakness	61.9	B
Overwork-exertion	44.0	B
Less resistance	37.7	B
Injury-accident-surgery	31.0	B
Nerves-body-blood	24.4	B
Prior Illness	16.2	B
Virus-germs-infection	13.3	B
FATE		59.9 -
Fate	53.1	C
Will-of-God	31.0	C
BEHAVIOUR - DEEDS	61.4	-
Poor health habits	52.0	B
Bad deed in past life (karma)	19.3	C
SOCIAL	70.7	-
Financial stress	42.9	S
Other interpersonal problems	18.2	S
Stress, loss, shock	25.0	S
Marital problem	19.0	S

Cultural Epidemiology of NSDs in Four Clinics

Perceived Cause	Four Clinics (N=352)	Supergroup category
Bereavement	16.5	S
Work problems	14.5	S
Family illness	12.8	S
HEAT - HUMORAL	65.1	-
Heat-cold (internal)	33.8	C
Bile (pitta)	24.4	C
Climate (hot or cold)	28.7	C
Wind (Vata-vayu)	17.4	C
INGESTION	53.7	-
Diet since childhood	30.4	B
Bad food or water	14.7	B
Prescribed medicine	12.8	B
SORCERY - SPIRITS	36.4	-
Evil eye (drishta lagane)	22.2	C
Sorcery (jadu tona)	21.3	C
ENVIRONMENTAL	24.1	-
Environmental pollution	19.0	B
Contamination	11.6	B
SEXUAL - REPRODUCTIVE	48.9	-
Menses-abortion-menopause	16.8	B
Sexual Experience	14.5	S
Semen loss	13.1	C
Pregnancy, childbirth	15.0	B
Masturbation	12.5	B
HEREDITY	19.9	-
Familial upbringing	12.2	S
VICTIM OF ABUSE	12.8	P/S
OTHER	46.0	-

PCs with a frequency less than 15% in all clinics are not included. Grouped categories expressed in bold caps. Supergroup classification is indicated in the last column for coded categories: B-Biological, P-Psychological, S-Social and C=Cultural, which are basis for comparison of prominence in table 5. Two categories comprising VICTIM OF ABUSE not shown because <15% in all clinics; childhood abuse mapped to P and victim of violence mapped to S supergroups.

Table 5.4: Prominence of clinic-specific perceived causes reported by NSD study patients

Perceived Cause	Psychiatry (P) (n=83)		Medicine (M) (n=98)		Dermatology (D) (n=85)		Ayurved (A) (n=86)		P-value Crude	P-value Adj	Significance of female sex adjustment variable	Significance of age adjustment variable
	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported				
Semen loss	0.54 (1.6)	18.1	0.06 (0.4)	3.1	0.82 (2.1)	22.4	0.30 (1.0)	10.5	0.001	0.000	Neg***	NS
Other interpersonal problems	0.87 (1.6)	32.5	0.67 (1.8)	18.4	0.24 (0.8)	10.6	0.35 (1.2)	11.6	0.001	0.001	NS	NS
Worries, mental tension	3.43 (3.2)	74.7	2.98 (2.8)	79.6	2.13 (2.7)	58.8	2.07 (2.8)	59.3	0.002	0.003	NS	NS
Wind (Vata-vayu)	0.37 (0.9)	18.1	0.14 (0.6)	8.2	0.29 (0.8)	15.3	0.54 (1.0)	29.1	0.003	0.003	NS	NS
Will-of-God	0.64 (1.1)	31.3	0.78 (1.1)	44.9	0.38 (0.8)	22.4	0.38 (0.8)	23.3	0.003	0.001	Pos***	NS
Masturbation	0.59 (1.7)	16.9	0.20 (1.2)	3.1	0.94 (2.3)	20.0	0.45 (1.7)	11.6	0.003	0.001	Neg***	Neg***
Menses-abortion-menopause	0.23 (0.7)	10.8	0.69 (1.6)	27.6	0.25 (0.8)	9.4	0.54 (1.5)	17.4	0.005	0.001	Pos***	NS
Weakness	1.36 (1.8)	56.6	2.42 (2.5)	69.4	1.49 (1.8)	61.2	1.48 (1.7)	59.3	0.010	0.009	NS	NS
Bile (pitta)	0.53 (1.3)	24.1	0.36 (0.8)	21.4	0.49 (1.5)	14.1	0.57 (0.9)	38.4	0.010	0.008	NS	Pos**
Contamination	0.13 (0.4)	10.8	0.09 (0.5)	5.1	0.18 (0.6)	10.6	0.30 (0.7)	20.9	0.011	0.036	NS	NS
Environmental pollution	0.43 (1.2)	21.7	0.14 (0.4)	12.2	0.27 (0.7)	15.3	0.49 (0.9)	27.9	0.028	0.001	Neg***	NS
Other (Miscellaneous)	1.68 (2.6)	38.6	0.80 (1.9)	22.4	1.61 (2.3)	40.0	1.66 (3.0)	29.1	0.029	0.092	NS	NS
Personality	0.74 (1.1)	42.2	0.44 (0.9)	25.5	0.34 (0.7)	24.7	0.57 (1.1)	29.1	0.040	0.133	NS	NS
Bereavement	0.75 (2.1)	15.7	0.79 (2.1)	19.4	0.13 (0.5)	8.2	0.84 (1.9)	22.1	0.056	0.132	NS	NS
Sexual Experience	0.35 (1.0)	12.0	0.16 (0.6)	10.2	0.99 (2.3)	22.4	0.42 (1.4)	14.0	0.063	0.000	Neg***	NS
Injury-accident-surgery	0.72 (1.8)	24.1	1.22 (2.5)	30.6	1.00 (2)	28.2	1.44 (2.1)	40.7	0.070	0.000	Pos***	NS
Pregnancy, childbirth	0.23 (0.9)	8.4	0.70 (2.0)	16.3	0.39 (1.1)	12.9	0.77 (1.9)	22.1	0.080	0.000	Pos***	NS
Food or water	0.15 (0.6)	6.0	0.36 (1.2)	16.3	0.41 (1)	18.8	0.45 (1.2)	17.4	0.081	0.113	NS	NS
Bad deed in past life (karma)	0.37 (0.9)	20.5	0.25 (0.7)	14.3	0.27 (0.7)	15.3	0.49 (0.9)	27.9	0.088	0.043	Pos**	NS

Kruskal-Wallis test for crude comparison of prominence.

Clinic differences were adjusted for sex (male baseline), age, and clinic (lowest rank score as baseline). Significance of sex and age in the adjustment with multiple regression on rank-ordered data are indicated as positive, negative or not-significant (NS); *P<.10, **P<.05, ***P<.001. Table does not include categories that are not significantly different across clinics.

Table 5.5: Prominence of clinic-specific perceived causes reduced to bio-psycho-social-cultural supergroups for NSD study patients

Perceived Cause	Psychiatry (P) (n=83)		Medicine (M) (n=98)		Dermatology (D) (n=85)		Ayurved (A) (n=86)		P-value Crude	P-value Adj	Significance of female sex adjustment variable	Significance of age adjustment variable
	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported	Mean Prom (SD)	% Reported				
Biological (Somatic)	4.45 (2.7)	95.2	5.63 (2.9)	98.0	4.72 (2.5)	98.8	4.98 (2.6)	98.8	0.015	0.006	Neg**	NS
Psychological (Emotional)	3.95 (3.0)	84.3	3.13 (2.7)	81.6	2.47 (2.6)	71.8	2.23 (2.8)	61.6	0.000	0.000	Pos**	NS
Social	3.08 (2.8)	77.1	2.93 (2.8)	75.5	2.86 (3.0)	70.6	2.57 (2.7)	68.6	0.488	0.384	NS	NS
Cultural (Indian traditional)	2.65 (2.1)	90.4	1.82 (1.7)	83.7	2.75 (2.2)	89.4	1.98 (1.5)	84.9	0.006	0.002	NS	Pos**

Kruskal-Wallis test for comparison of mean prominence.

Clinic differences were adjusted for sex (male baseline), age, and clinic (lowest rank score as baseline). Significance of sex and age in the adjustment with multiple regression on rank-ordered data are indicated as positive, negative or not-significant (NS); (*P<.10, **P<.05, ***P<.01).

5.5.6 Prior help seeking and self-help

Prior help-seeking experience is summarized in Table 5.6. Consultations with a family doctor or private clinic were most common, followed by Government hospital clinics. Various clinical specialists apart from psychiatrists were commonly reported. Pluralistic help seeking was common. Ayurvedic practitioners, homeopathic doctors, druggists or pharmacists, or VD/Sex clinics were used by nearly 60% of patients. Mental health specialists were used by far fewer. Alternative religious, spiritual, yogic, and faith healing sources of help were reported by more than 60% of patients.

Table 5.6: Prior help seeking reported by NSD study patients (%)

Source of Past Help	Four Clinics (N=352)	Psychiatry (n=83)	Medicine (n=98)	Dermatology (n=85)	Ayurved (n=86)	P-value
Family doctor or clinic	67.6	69.9	70.4	62.4	67.4	0.718
Government doctor or clinic	37.5	36.1	39.8	34.1	39.5	0.665
Other specialist (not psychiatrist)	24.1	37.3	14.3	23.5	23.3	0.008
Druggist pharmacist	22.2	15.7	26.5	22.4	23.3	0.340
Traditional Ayurved, Unani or Siddha	19.0	26.5	9.2	17.6	24.4	0.014
Healing temple	16.5	24.1	14.3	10.6	17.4	0.097
Homeopath	12.2	21.7	5.1	7.1	16.3	0.001
Faith healer	12.2	22.9	9.2	9.4	8.1	0.009
Local herbal healer	11.1	13.3	6.1	15.3	10.5	0.282
Yoga or physical exercise	11.1	13.3	5.1	17.6	9.3	0.052
Mental health specialist	10.8	30.1	4.1	8.2	2.3	0.000
Brahmin, vow, fast	8.0	9.6	9.2	5.9	7.0	0.759
VD, sex clinic	6.0	8.4	2.0	8.2	5.8	0.242
Other	4.3	8.4	4.1	3.5	1.2	0.137
Astrologer	3.7	7.2	1.0	3.5	3.5	0.180
None	3.1	1.2	5.1	3.5	2.3	0.481

P-value based on Chi-square test.

Medical pluralism appears highest for patients in the Psychiatry clinic, with the relatively highest frequency of prior use of various specialists, Ayurved, homeopaths, faith healers and mental health specialists. Prior use of other sources of help was least in the Medicine clinic for all categories with significant cross-clinic differences, except for prior use of faith healing and mental healthcare providers. Although reported with a low frequency by Medicine clinic patients, these two categories were still lower for patients in Ayurved. The highest rate of prior use of yoga and physical exercise was notable for patients of Dermatology.

More than half of all respondents reported some kind of prior self-help for their condition (55.7%), and patients typically reported more than one kind of self-help. Most acknowledged use of various forms of self-help only in response to questions probing prior use, rather than spontaneously. The most frequent categories were rest (44.9%) and diet (30.7%). Other reported categories of self-help included prayer and temple visits (28.4%), talking with others (24.1%), exercise (23.6%), meditation (19.3%), vitamins (13.6%), and changed lifestyle (13.4%).

5.6 Discussion

The study examined socio-cultural features of NSDs among Indian patients in their own culture and particularities of the four distinct clinics. The findings complement earlier clinical psychiatric (18), epidemiological (13), and comparative nosological (4) reports.

Patients in our study lived in the same geographical region and had few socioeconomic differences. Yet their explanatory models differed markedly in important respects, perhaps reflecting social and cultural diversity of India. The distinct clinics they attended reflect different perceptions of health and different ways to manage the distress or illness. Biological, psychological and cultural models (but not social models) were different across the four clinics. There also were significant gender and age-differences in perceived causes. Men were oriented more toward biological, environmental and sexual causes. Women readily reported or accepted psychological causes, will-of-God, and karma. Cultural causes positively correlated with age indicating less use of cultural explanations in younger populations. Though lowest in prominence in all four clinics, cultural causes were the second most frequent category, suggesting that they are more likely to be used when patients are faced with uncertainty.

In clinical settings across the globe, the priority given to NSDs has often been diminished because of the difficulty conceptualizing these conditions by doctors and patients, as well as in diagnostic nosology. We found that both

doctors and patients had difficulty naming NSD conditions, which implicitly denied their legitimacy (20). Similar findings of delegitimation of individuals with NSDs can be seen in reports from many parts of the world. This also contributes to perceived stigma of a clinical problem that seems vague or unreal; in the extreme, patients have been regarded as malingerers (9,21). Relatives may also question the reality of suffering of these patients or dismiss symptoms as unwarranted complaints (21).

We applied cultural epidemiological methods to the study of explanatory models of NSDs. NSDs have been widely studied in Europe and North America, where patients' preferences for biomedical explanations of CFS, ME, and fibromyalgia are well-known in the scientific and advocacy literature (22). Clinical ethnographic study of neurasthenia in China has emphasized its social and political basis (23-25). The cultural basis of these disorders is illustrated by their association with distinctive cultural concepts, such as semen loss in South Asia and weakness (*ashaktapanna*) in the Marathi language. Fatigue (Marathi: *thakwaa*) characteristically refers to a debilitating experience after physical exertion or mental effort, and weakness refers to a lack of strength regardless of prior activity. The focus on weakness (*ashaktapanna*) represented in the narratives also helps to explain local patterns of distress that give greater weight to loss of motivation and enthusiasm, which in turn leads to withdrawal and inactivity distinguishing it from depression. Cultural physiological models in Ayurvedic theory deal with the metabolism of food as understood through the transformation of food into the blood, muscle, bone, and so on. Semen (*dhat*) is regarded as the final product of this process.

5.6.1 Cross-cultural comparisons

Our findings demonstrated common cross-cutting features of NSDs in patients drawn from four specialty outpatient clinics. Although most studies of NSDs in higher income countries focus on fatigue while recognizing weakness, our findings for Indian patients indicate that weakness is as important or more so. The Marathi term for weakness, *ashaktapanna*, was more clearly associated with the condition than comparable terms for fatigue. This focus on weakness was identified in the illness narratives of patients from all clinics, and it is consistent with a similar finding highlighting the importance of weakness in another East Asian study in Hong Kong (26). Tension was another important term that was used frequently in the narrative account of many patients. This term has been identified as an important focus in accounting for common emotional symptoms, which may also be severe and even be invoked to explain suicidal behavior (27).

Overall, our patients were dissatisfied with the effectiveness of the healthcare they had received. They were optimistic about outcome, though perplexed about the most useful source of help. This optimism is in contrast with the nihilism of CFS patients in Europe and North America. Discontent was similar to findings from research in the United Kingdom (28). Similar to these British patients, it was not solely symptom relief that determined satisfaction, but also the quality of their interactions and the opportunity to explain their problems.

Clinicians typically find it difficult to treat patients with NSDs (29), because the history and clinical examination do not fulfill the expected pattern of clinical disorders emphasized in their training. Other patients with serious problems for whom the diagnosis and treatment are clear, compete for clinical attention and receive a higher priority. In the absence of a definitive history, physical and laboratory findings, the account of these patients may be dismissed. Clinicians may refer to another clinic or offer only reassurance from ruling out conditions they are more familiar with, rather than providing a clear statement of the patient's problem, prognosis, and course of treatment.

Gender-specific aspects of the condition distinguished women's accounts of victimization, which have also been noted in community studies of NSDs (12). Intense and severe distress over a prolonged period due to multiple chronic and severe stresses, such as victimization, was described by our study patients in the context of family-interpersonal stresses. A study of patients with CFS/FM attending tertiary care clinics of general internal medicine and rheumatology in Belgium found victimization was reported by a majority of middle-aged, higher educated women living with partners, and the victimization was generally long-term and occurred in the domestic setting (30).

Early adverse experiences have been shown to be a risk factor for future CFS (31) or adult headache (32). Suppression of anger mediated through anxiety and depression may be related to unexplained somatic symptoms in anxiety disorders and somatoform disorders (33). These disorders were the most frequent comorbid psychiatric diagnoses in our study patients. Negative feelings such as helplessness, hopelessness, anger, and frustration detailed in patients' narratives may be associated with fatiguing illnesses, in ways suggested by the view of CFS as "protest" (34).

There was a high frequency of biological explanations in our study. A positive correlation between medically unexplained symptoms and physical perceived causes has been observed by others, for example, in an epidemiological study from seven specialties from the UK (35). Consistent with these biological explanations, prominent sources of self-help reported by our pa-

tients have been rest, diet and physical exercise. They expected the provider to prescribe tonics, medicines for strength, intravenous fluids and even blood transfusions to replenish the systemic deficit thus restoring their strength. These practices and expectations about help can be traced to their cultural physiological beliefs about sexual-menstrual-reproductive causes, indicating the concept of underlying systemic deficiency, often endorsed by doctors as “insufficient blood.” Patients expected appreciation and support because they continued to overwork despite weakness.

5.6.2 Cross-clinic comparisons

Notwithstanding considerable overlap, common cultural features were elaborated in clinic-specific ways. Patients in the Psychiatry clinic were relatively more concerned with psychological and emotional distress, and most likely to explain the cause of their condition as rooted in interpersonal conflict, worries and tension. Medicine patients emphasized somatic symptoms and anxiety. It is significant that Medicine patients considered weakness as a significant cause, and not just a pattern of distress. This perceived cause exemplifies the concept of systemic deficiency giving rise to NSD, which is most typical in this clinic and this finding persists even after adjustments for age, sex and clinic. Medicine patients tended to be more anxious and less likely to refer to cultural concepts. Although many did refer to the Will-of-God, this was a less specific explanation and more an indication of their resignation and acceptance of their condition. Cultural concerns about semen loss were more common in Dermatology (which treats sexually transmitted diseases) and concern with humoral balance was more frequent and elaborated in narratives from patients in the Ayurved clinic. However, Ayurved patients considered causes from all realms - cultural (wind and bile), biological (contamination, environmental pollution, injury-accident and pregnancy-childbirth), social (bereavement), and traditional cultural (karma).

Wessely and colleagues (34) reported better prognosis of CFS among patients who attributed their suffering to multiple and external causes rather than single or physical causes. This may explain the observation of less psychopathology among Ayurved patients. They typically reported multiple perceived causes and had less frequent or milder anxiety and depressive disorders, as assessed by the SCID, Hamilton, and SCL-90 (18). Their psychological symptoms (e.g., anxiety, worthlessness, sadness, and loneliness) were least prominent compared with patients in the other clinics.

In their illness narratives, study patients frequently commented about dismissive and rejecting behavior of the providers, especially in crowded clinics of subsidized care, hospital study setting. Their chronic illness with

suboptimal outcome further put them off due to the unsatisfactory explanations from caregivers. Unclear illness experience (which could not even be named properly) and dissatisfaction with the service, despite continued optimism about the outcome, prompted medical pluralism with the hope of finding relief elsewhere. They entertained multiple possible explanations with relatively weak emphasis on any one explanation that led them to consider help from multiple sources. High frequency of lay referrals, perceived helplessness, and suggestibility of patients may also explain pluralistic help-seeking behavior.

The low cost of some sources of help had an appeal in the context of poor resources and limited social supports. Tenacious resistance in acknowledging the relationship of stressors to the illness (observed, though not reported here) may also have perpetuated experimentation with various providers.

In view of the vagueness of the NSD conditions, medical pluralism was expected. This tendency was highest for patients in Psychiatry. The stigma associated with this clinic made it least attractive to patients, and most came to the clinic by referral rather than their own choice. These patients were more likely to reach Psychiatry after a lengthy course of help seeking and referral. Medicine patients were the least likely to explore alternative help-seeking, perhaps due to their preoccupation with the elusive medical condition which they believed to be at the root of their weakness. The cultural interpretation of NSDs, relating symptoms to sexual weakness, which was highlighted most clearly by patients in the Dermatology clinic, was also an identifiable feature of presentations in other clinics as well. Ayurved patients de-emphasized the psychological component in their patterns of distress, perceived causes, and help-seeking. In a sense, they were the most contemporary in that they situated their suffering in the context of biological, social, and external real world conditions, with minimum emotional suffering but with cultural traditional explanations.

Over 36% of study patients said that sorcery or spirit-related matters might explain their problem. It is the destructive emotions such as hatred, envy, greed, and jealousy of close ones that one is afraid of (H. Basu, personal communication, 2008), which are conveyed through these perceived causes.

The sexual basis and role of cultural physiological explanations of weakness have been a fundamental concept in accounts of the Indian dhat syndrome (15,36,37). Dhat may be regarded, at least to some extent, as a regional cultural formulation of a clinical NSD. Because the Dermatology clinic is known as a specialty care facility for sexually transmitted diseases, patients presenting there for treatment of NSD symptoms might be expected to refer to a sexual excess or semen loss. The moral basis of their concerns,

however, was variable. For some it was purely a physiological reaction, while for others there was a clear association with illicit and immoral behavior in the past, indicated by references to childhood masturbation, that contributed to the explanation and meaning of the condition for them. The moral basis of perceived causes in Ayurved clinic patients focused most on the role of a deed in the past life (karma) as compared with other clinics. Men were more likely to consider sexual experience as a cause than women indicating different attitudes of men and women toward sexual experience or difference in ease of sharing.

5.6.3 Conclusion: Implications for cultural psychiatry and clinical care

Findings of related but diverse clinical concepts of neurasthenia and medically unexplained chronic fatigue suggest the value of recognizing a range of neurasthenia spectrum disorders (NSDs). Clinicians may have difficulty with classifying NSDs as somatoform disorders because they expect patients to deny the role of psychological causes in their suffering. However, our study patients largely acknowledged psychological causes for their suffering. As a technical matter, these patients may be diagnosed with non-specific somatoform disorders. Although their condition fits that category, it is inadequate because it fails to give required attention to the critical role of social context and cultural meaning.

This study shows the importance of a biopsychosocial model of NSDs. Inasmuch as we could readily identify patients meeting essential criteria of NSDs, it is clear that the core features of these disorders, though conceived in various cultural and clinical settings, should not be regarded as culture bound, even though the experience and meaning of NSDs are strongly influenced by social and cultural contexts. We have shown how they are also influenced by subcultural considerations that are a feature of the pluralism of help seeking even within a single large hospital. However, the pervasive belief in cultural physiological concepts among all study patients suggests that NSDs are aptly called “cultural disorders of fatigue or weakness.” Our findings provide a reference database of explanatory models that indicate cultural norms and clarify intracultural diversity.

Physicians in the four clinics we studied apparently make diagnoses consistent with the expertise and clinical priorities of that clinic. They tend to give less attention to co-morbidity beyond the focus of their clinic, to the contextual features of presenting problems, and to their social and cultural underpinnings. Findings in the study demonstrated the importance of social stressors, however, such as domestic and interpersonal “tensions” and particular concerns about ways of coping with the condition. These accounts

complement and enhance a clinical diagnostic approach to assessment and treatment, and respond to recognized needs for treating medically unexplained symptoms of NSDs (38).

Our approach not only demonstrates the relevance of social and cultural features of the condition but also provides a framework for assessing illness experience and meaning with reference to cultural meaning and key interpersonal relationships. Paralikar, Agashe, and Weiss (39) have described how a cultural approach to psychotherapy envisages encouraging patients to examine and experiment with subjective and local cultural formulations of their illness. Cultural inquiry eliciting patients' subjective distress restores needed balance that includes the social and cultural in applying a biopsychosocial model to NSDs.

Findings from our cultural epidemiological study may guide clinical cultural formulations by providing reference data for interpreting illness experience and meaning of individual patients in defined settings (viz., the four outpatient clinics of our study in urban India). Collective experience from such research in this and other studies should be considered in formulating valid concepts of somatoform disorders and NSDs.

NSDs are conditions rooted in cultural physiological beliefs (e.g., Dhat syndrome, beliefs about weakness and systemic deficiency). These local concepts provide non-stigmatizing explanations and means of coping with NSDs, and they indicate perceived needs to which clinical care needs to respond. This study clarifies the relative prominence of normative cultural explanations with reference to their physical, psychological, and social explanations. Relating common and distinctive features in four clinics, findings enable clinicians to better understand and work with patients more effectively, based on clinical models that are sensitive to cultural meanings.

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6. Discussion: contributions and implications of the research

Neurasthenia Spectrum Disorders: Clinical Cultural Epidemiology in Pune, India

6.1 Contributions and implications

Neurasthenia Spectrum Disorders (NSDs) have posed serious challenges in clinical, psychiatric, nosological, and cross-cultural fields, as well as for public health as outlined earlier in introduction. This overarching study of NSDs with the use of clinical cultural epidemiological framework has laid foundation by detecting, documenting and understanding these so-called disorders with normative stresses, high emotional distress, and pluralistic help seeking behaviors in multicultural clinical setting in urban Pune, India. A better understanding of patients' views of the condition and expectations of treatment would contribute to more effective services and treatment.

Our objectives for clinical epidemiology were to assess the prevalence of NSD core criteria, and to assess routinely examined biomedical and psychiatric accompaniments of NSDs. Toward the nosological component of epidemiology the objectives were to assess the frequencies and concordance of the four NSD criteria sets across four clinics. To clarify the cultural epidemiology the objective was to elicit the explanatory models using EMIC interviews. Fulfilling these aims is expected to help answer the research questions that would help control and prevent the disorders now designated Neurasthenia Spectrum Disorders (NSDs), and Medically Unexplained Symptoms in a larger perspective.

In the following sections are outlined the salient and other findings that contributed to study aims, and their implications in the light of current understanding in the field. They have been covered in the preceding chapters embodying the research papers. This chapter also discusses salient preliminary findings from the study comparing depressed and non-depressed patients with NSD core criteria regarding their perceived causes and sociodemographic features to look for potential predictive features of depression, although the full paper could not be commissioned in this thesis.

6.2 Phase 1:

Prevalence Study

6.2.1 The Screening Tool to Assess Magnitude of NSDs in Clinical Settings

We designed a special brief semi-structured interview tool to assess the prevalence of clinically significant medically unexplained fatigue or weakness of sufficient duration and severity that prompts help seeking. It was done among consecutive patients to validate the existence of NSDs, and specify

the vulnerable population. Because we did not 'elicit' fatigue or weakness by probe questions, did not ignore weakness, and considered them as continuous variables for measurement, the screening tool itself is a contribution to the field. Validation and cross-cultural consistency of NSD-core criteria in the multicultural clinic setting at the study site with identification of vulnerable groups was discussed in chapter 2.

6.2.2 Other Findings

We found a prevalence of 5.02% among 1,874 consecutive patients attending the four distinct outpatient clinics with significantly more prevalence among women and among patients from culturally oriented clinics of Dermatology and Ayurved. Logistic regression identified female sex and dermatology clinic as the risk markers of NSDs, in congruence with the expectation of higher prevalence in the Dermatology clinic related to cultural conceptions of the illness. Variations in prevalence frequently reported from different settings in the world are explained by the way questions were framed for assessing these interests. Cross-clinic differences in suspected organicity (Medicine clinic), in relative reluctance for help seeking (Dermatology clinic), or chronicity and disability (Ayurved clinic) implied distinct clinic-specific profiles of NSDs.

Patients screened had significant age-differences across clinics, but those who screened positive for NSD core criteria had similar mean age across clinics, implying a uniform group of patients with NSDs. Also, the range of prevalence figures comparable with those across the world further corroborated our methods and findings. We could see that clinical meanings led to referrals to psychiatry, and cultural meanings led patients to choose their clinics. Findings also justified biomedical, psychiatric, nosological and cultural inquiry into the problem of NSDs.

6.2.3 Open Questions

We need to compare magnitude in rural settings and in private sector health care - a major part of health care delivery in India. Burden of disease studies including computation of direct, indirect, and hidden costs of NSDs are necessary to inform resource allocation and health care delivery. Gender studies to examine the stresses of women and the lost productivity are important for rapidly developing economy, especially as commerce and success are important cultural considerations (1,2). However, need for culturally sensitive counseling is endorsed from these findings, and the need for preparedness of the healthcare systems generally, and psychiatric settings particularly, in the context of rapid change.

6.3 Phase 2:

Clinical Cultural Studies

6.3.1 Biomedical markers and Psychiatric comorbidity

6.3.1.1 'Weakness and Anxiety', with Psychophysiological Features

Underlying medical and psychiatric disorders are a crucial interest for NSDs, especially as fatigue and weakness were regarded as secondary complaints. We found evidence for sarcopenia (deficient estimated muscle mass) among patients with NSDs in a small case-control design. It is a significant lead not only in the nature of the finding, but also noticing the fact that in leading urban general hospitals nutritional status is not given due attention.

We conducted a psychiatric epidemiological assessment of patients with NSD core criteria, documenting the excess prevalence of non-specific categories, namely 'undifferentiated somatoform disorders' and 'anxiety disorder NOS (Not Otherwise Specified)', but also discovering 45% of patients who met criteria for depression (Current Major Depressive Episode and Dysthymic Disorder). Documenting the preponderance of anxiety disorders and somatoform disorders over depression in Indian sample is a salient finding. *Weakness with anxiety* in Indian clinical settings rather than *fatigue with depression* unlike in the West constitute a significant contribution. These profiles are likely to gain support from psychobiological evidence corroborating cultural difference through distinct stress responses for anxiety and for depression leading to defensive withdrawal and lassitude (3,4). The biomedical and psychiatric accompaniments of NSDs were detailed in chapter 3. Prominence of distress reflected in SCL-90 and Hamilton scores despite non-specific psychiatric diagnoses is also a significant finding, making it explicit that *NSDs may not be explained medically and psychiatrically, but they are explainable physiologically and psychologically.*

6.3.1.2 Other Findings

All patients in the study sample were assessed clinically by an internist with routine and additional investigations, if necessary, before they were allowed to be included in the study as 'biomedically unexplained'. Medicine clinic was notable for less hemoglobin in male patients, and less estimated muscle mass in females. This may be related to the finding in the prevalence study, where medicine clinic patients were among the most to be ruled out for having possible biomedical basis. However, when both males and females were considered together from all four clinics and compared against control

subjects, they were significantly deficient only in muscle mass, but not in hemoglobin or BMI, perhaps indicating constitutional sarcopenia as peculiar feature of Indian body-composition (5) for a subset of individuals, or the different activity levels of patients and controls (6). Thus, physiological variation in the form of sarcopenia and psychological-temperamental variation in terms of neuroticism or negative affectivity leading to disproportionate distress reflected in high SCL-90 scores and moderate Hamilton scores may be psychophysiological characteristics of NSDs, but not medical or psychiatric disorders, except perhaps depression. Also, generalized anxiety disorder and adjustment disorders indicated nutritional deficits for patients, though not the 'Not Otherwise Specified' (NOS) categories on SCID. It highlights the value of context-sensitive assessment of biomedical markers and professional psychiatric assessments. Importance of anthropometric and additional nutritional assessments in Indian setting, and relevance of dimensional measurement of psychopathology over categorical assessments became obvious.

6.3.1.3 Open Questions

Our control sample was small due to the restrictions of the setting. Only limited anthropometric measurements were done. The need remains to have a larger proper control group for accurate measurements of muscle mass, for including other indicators of nutritional deficiency and certain laboratory investigations, such as thyroid function, among all patients with NSDs. NOS features in psychiatric diagnoses suggest cultural construction of the concerned diagnoses, as they do not fit into the 'universal' validated psychiatric diagnostic categories. SCID should have algorithms directing NOS diagnoses to cultural formulation. Clinicians should be encouraged to look closely into patients with NOS diagnoses, urging for a clinical cultural assessment. Moreover, as our findings showed that NSDs are better characterized by distress than disorders, axis II evaluations are necessary in these patients. There is evidence for their distinctive attachment patterns (7-11). As patients with NSDs are non-psychotic, non-substance dependent, with frequent anxiety-depressive and NOS disorders, study of their psychotherapy (12) including attention to relational functioning (13,14) may be warranted.

6.3.2 Diagnostic concordance among NSDs

6.3.2.1 Concept of Neurasthenia Spectrum Disorders

During the course of work and writing reports, it became obvious that existing formulations of fatiguing disorders are indeed examples of culture-specific disorders with shared essential *clinical* features; but additional *cul-*

tural features reduce their sensitivity (15) - namely, of CFS and NT. Therefore, our broad-based inclusion criteria - based on clinical significance alone - were construed as a case-definition for disorders of medically unexplained clinically significant fatigue or weakness - designated NSDs, to remind that we are still far from reaching the goal of understanding or controlling and preventing these disorders embodying somatic and cultural dimensions. This conceptualization as Spectrum Disorders is valid due to overlapping syndromes construed in different cultures of the world for local validity. Attempts at cross-national validity by DSM-IV draft, and ICD-10 were obviously inadequate to find an adequate, contemporary, and cross-culturally valid case-definition. We believe the construct of NSDs would do justice to clinical, psychiatric, as well as cross-cultural and social theory and research. Details of the poor concordance and development of the concept of NSD are described in chapter 4.

6.3.2.2 *Other Findings*

We intended to measure the diagnostic concordance among the alternative formulations of fatiguing disorders due to the overlapping definitions used in different regions of the world, and none used routinely in India, so as to conclude which would best suit Indian clinical settings. As all formulations are based on the essential core features as pointed out by Prins et al (16), and our case-definition was based only on the essential core features, we expected an excellent agreement among all categories. We found wide ranging agreements with CCMD-2 NT (77.6%) at one extreme, to a meager 13.4% with CDC CFS, and 16.5% of study patients meeting criteria for none. Pairwise and four-way concordance were also poor, indicating existing formulations identified different subgroups of patients across four clinics, when actually all patients had fulfilled the essential core criteria of NSDs. Progressive differential attrition of cases during application of diagnostic criteria of the four NSDs was explained on the basis of semantics of case-definitions. Overall very poor kappa (0.02) indicated the level of discordance among the existing formulations.

This led us to conceive the inclusive broad construct of Neurasthenia Spectrum Disorders to highlight the clinical interests implying identical underlying concept with acceptable range of variations in diagnosing, but need for consideration of individual features and contexts.

6.3.2.3 *Open questions*

It would be in the interests of nosology with reference to features we have identified with NSDs to compare the magnitude across various low-, middle-

, and high-income countries. It would be of value because this construction is formulated purely on the basis of clinical significance of reported symptoms, leaving cultural assessments until after the presence of the condition is validated. Also, attention to semantic constructions for case-definitions with uniform cross-cultural applicability is warranted prioritizing spontaneously reported fatigue or weakness, physical or mental.

6.3.3 Cultural Epidemiology of NSDs

6.3.3.1 Cross-cultural and Cross-clinic Comparisons of NSDs

Diverse explanatory models of Indian study sample featuring psychological models and prominent weakness with anxiety as salient features of these models may be regarded as contributions to open questions in the field of cultural psychiatry.

Fatigue with depression is characteristic of Euro-American and Australian patients with NSDs, and somatization with debated depression in China. Prominent emphasis on biological models with relentless investigations and research characterize American scientific milieu, while pragmatic biomedical approach maintaining careful atheoretical stance is the European solution to this conundrum. China seem to be restricting NT to pure somatic distress devoid of psychiatric comorbidity, after much vacillation through revisions of CCMD-2. However, painful social suffering for the masses in the context of recent sociopolitical history had been the major shaping cultural feature of Chinese neurasthenia until recently. No such distinctive effort has been made in India unlike in China (17,18). Ware and Kleinman in their landmark papers (19-21) elaborate on the occurrence, course, and outcomes in cases of NT in China, and CFS in the US. NT in China had a background of decades of political oppression, victimization, stigmatization, negotiations, uncertainties, and ruined careers, disrupted families, and dashed hopes, pervasive disillusionments that punctuated these steps in social course. In US it was the background of a near-total burnout after new-found sense of identity following women's liberation having spurred the hyperactive pursuit of all possible roles that women could take (19).

Cultural patterning according to age, sex, and clinics was obvious, representing subcultural variations. Females prominently acknowledged PCs related to psychological, 'will of God', injury-surgery; and karma; and males reported environmental, sexual, and biological (overwork) PCs. Thus, although both men and women covered biopsychosocial and cultural realms of PCs, the cultural patterning across gender and clinics was obvious. Cultural causes were positively correlated to age. Biological explanations were more

common in Medicine, psychological in Psychiatry, cultural in Dermatology, and multiple models in Ayurved. Social PCs were pervasive. Masturbation as a PC became less with age, but bile (pitta) as a PC increased with age. Narratives of women frequently reported role-multiplicity, compulsion to work despite illness and weakness, lack of appreciation and supports from significant others, alcoholic and abusive husbands, and problems related to reproductive decisions, events, and procedures. Men with NSDs were generally demoralized, preoccupied, and concerned about their competence in the role of provider. Also they expected more support from the family, and felt abandoned and stigmatized due to illness and impairments, especially earning capacity. It must be remembered that majority (52%) had reported poor health habits implying insufficient care of self and comparable number had sexual PCs for their NSDs.

Diversity of explanatory models of Indian patients implies the need to understand each patient carefully for individual model, bringing with it diverse expectations of care, variable social course, and variegated prognostic outcomes. Also, prominent psychological models showed that NSDs are more than just another category of somatoform disorders. Details about the cultural epidemiological exposition of explanatory models of the Indian sample were described in chapter 5, which would be a reference base for cultural psychiatry of NSDs and can also potentially be useful in sociocultural theory and research. They have valid application in the contexts of epidemiological transition and impact of urbanization in the contexts of livelihoods, explanatory models, gender, social-interpersonal relationships and stigma in addition to resilience and vulnerabilities. This research has also documented the need for complementary but essential use of a cultural formulation (22-24) with the professional diagnoses for cultural competence of effective clinicians in multicultural settings.

6.3.3.2 Reported stresses

The profile of Indian clinical sample with NSDs is marked by mixed somatic, cognitive, behavioral, and affective symptoms in the context of normative stresses that are not acknowledged easily to be related to their NSDs. Death or illness of a close relative, serious financial problems, family and child-care responsibilities were among the most frequent stresses reported; but interestingly, only about 50% of patients considered them to be related to their NSD, and even less in case of major academic failure. Serious personal illness, problem with marriage or in-laws, job loss, serious conflict, legal disputes and being a victim of violence were reported frequently, but acknowledged partially. If we consider family and childcare responsibilities

(46% reported, 25.6% acknowledged), marital (34.1, 24.7%) and in-laws problem (23.6, 13.1%) as general family-interpersonal stresses, everyone has reported more than one of them - because only 64% were partnered and 13% were separated or widowed.

Thus our sample of NSDs across four clinics comprised non-psychotic, non-substance dependent individuals; who were concerned about family-interpersonal stresses and worried about financial and health problems. Most of them were striving hard; only 12 men and 9 women were unemployed; 123 women were homemakers. Sharpe acknowledged 'good' premorbid personality characteristics, particularly conscientiousness (25), of NSD patients. Study of personality and relational patterns of patients will thus elucidate the interaction of cultural contexts with personality factors.

6.3.3.3 Most important perceived causes

Most Important Perceived Causes (MIPCs) reflected identical patterns with grouped and super-grouped PCs, indicating their importance in and agreement with explanatory models. Their explanatory models were diverse, with characteristically prominent biological explanations, followed by psychological and social PCs, and relatively more pervasive but less prominent cultural explanations. When patients were asked to identify the single MIPC, over 18% reported worries and thoughts, followed by 7% overwork, 6% weakness, 5% injury, 12.6% masturbation (males), and 4% nutrition. Another 6.7% of women said marital problems were the MIPC, while sexual experience-semen loss another 12.6% (males), and gynecological-obstetric causes 6.6%. Grouped MIPCs similarly covered the spectrum, with overwork-immune group of causes, psychological causes, social causes, and sexual causes, ranging from 21 to 13%.

6.3.3.4 Contexts and conflicts underlying distress

The contextual conflicts described by NSD-patients concerned with their normative daily hassles. Range of these stresses, though very broad, was generally devoid of political victimization or persecution like in China or unlike those of modernity with CFS in the US. Study patients narrated problem getting water for domestic use or agriculture. A youth from Psychiatry clinic narrated the source of interpersonal conflict: "We don't get water, because those people installed a motor." Getting water for daily use requires 'pressure' in the physical sense as well as in the political sense in Mumbai, similar to Pune, the study setting (26). Other studies elaborate vividly the sociocultural contextual stresses of Indian urban life in Mumbai and their relation to non-specific psychiatric disorders or emotional distress (27,28). Daily hassles

in urban life in a developing country can be persistent, demoralizing, or literally 'draining', as shown in many of study patients' accounts. Study patients had their contexts and conflicts more related to self and family-interpersonal issues (29) indicating that they are still not disengaged or alienated from their worlds unlike Chinese NT or CFS. This may explain their relatively milder presentations, hopeful prognosis, or better acceptance of their condition.

6.3.3.5 Cultural change

India seems to have been relatively spared of the debates and dissent about NSDs, perhaps due to the lack of massive social stresses leading to alienation, disillusionment, and disengagement in recent past like in China. The hectic pace and dilemmas of multiple options and role-multiplicity leading to a burn-out and disengagement are just beginning to rise, like in the US a couple of decades ago and argued to be important mediator of the CFS (19). Role of women is changing in present day Indian culture with more freedom, power and possibilities. Tracing the historical, clinical, sociopolitical and cultural similarities between NT and CFS, Abbey and Garfinkel asserted that both disorders were cultural products of modernity, times when preoccupations were material success and commerce, and coincided with changing roles of women (1). Another important facet of diversity of Indian culture is very wide socioeconomic range among her peoples reflected in the twin burden of undernutrition and over-nutrition (30). But urbanization often exposes the mismatch between ambition and social possibilities.

6.3.3.6 Summary and implications

Even within a single culture, differences exist in subcultural groups - even core beliefs are contested across class, caste, gender and political groups (19). We have achieved summarizing the patients' experiences, meanings, and expectations from a multicultural setting with normative behaviors and emotions. They are available for comparing with the experiences from other settings that generate NSDs arising from different sociocultural sources and processes. In short, we have abstracted the role of culture in the suffering by 'taking prominent averages' of cultural contexts above and beyond the unique narratives of patients. This process is similar to the construction of diagnoses around syndromes in classification systems (31).

Kleinman (32) observed and delineated the distinction between cure and healing. Treatment of disease implies 'cure' - increasingly so for Indian clinical settings, while treatment of illness implies healing. Problems of patient adherence to treatment and of dissatisfaction with care were argued to be

related to the fading aspect of 'healing' from medical treatments. Patients need both, cure and healing. Ayurved, like most other traditional forms of healing, promises to provide both cure and healing. Fabrega (33) points out that objectified and commodified medicine of post-modern era leaves personal suffering in the cultural context out of the bounds of modern treatments.

We assert the need to recognize culture-specific pathology and social processes accompanying NSDs. Keeping the physiological, medical, psychological, and psychiatric range of distress or disorders in the purview of the culture to which the patient belongs is essential, because this determines patient expectations and satisfaction. Any combination of disciplines of medicine is the product of contemporary cultural reality.

6.3.3.7 Open questions

It is hard to summarize, as implications and directions are multiple. Importing the categories of CFS, NT or FM easily would have been in keeping with history of development of psychiatry in India (34-36). But these disorders are neither diagnosed nor researched in India. Thus, a category fallacy was avoided, but also there is little further work on the condition in clinical epidemiological or public health spheres. Nor is there any social cultural contextual theory or research related to NSDs. Dementia, on the other hand, introduced recently on Indian scene, is more rapidly 'appropriated' by Indian communities and medical fields, and also encouraged by governments (35). Medical anthropological analyses of this phenomenon of 'appropriation' (36) would be useful for diagnosing and managing social political ills affecting health systems in India (34).

It would be desirable to have linkages of PCs in detail, facilitating the sociocultural and cognitive mapping of the beliefs. Where do these ideas come from? How does an individual process them? What actually guides the behavior? Perhaps prospective in-depth study in smaller samples would help epidemiology and public health by better understanding the origin of 'pathogenic agent' i.e. the risk factor, facilitating its control. Also it would help social psychology and cognitive psychology to trace the processes in decision making and action. The role of temperaments or various personality factors would be discernible, if we know how a person crystallized her/his particular beliefs. Finally, considering the normative stresses and distress underlying the phenomena of resilience and vulnerability make cultural studies of NSDs ideal to lead to constructing a cultural Review of Systems (29).

6.3.4 NSDs and Comorbid Depression

Here we present the salient features from preliminary analyses of the relationship between depression (Current Major Depressive Episode and/or Dysthymic Disorder) and the perceived causes of NSDs. The cultural epidemiological approach to analysis of how the meaning of NSDs is related to clinical depression considers the role of sociodemographic features and meanings of NSDs in an adjusted logistic regression model.

6.3.4.1 Somatization and Demoralization

Depression continues to be the most important comorbidity of NSDs, as it can get complicated with suicide, causes disability, and is severely distressing. Anxiety and somatoform disorders were more frequent comorbidity of NSDs, but the diagnoses were of non-specific categories implying high distress in the context of cultural construction of the illnesses. Somatization scores were the highest on SCL-90 except in Psychiatry clinic. Prominence of 'anxiety' and 'lack of enthusiasm' over anhedonia, patients' optimism about the outcome despite chronicity and complaints of limited care, suggest that patients with NSDs may have demoralization (37-39), who frequently meet criteria for depression.

6.3.4.2 Association with Sociodemographic Variables, Clinics, and PCs

Positive association of depression with psychiatry clinic, OBC caste, and male sex, especially in Dermatology and Ayurved, and negative association with age were notable features on logistic regression, though bivariate analyses showed no differences between the depressed and non-depressed patients across sociodemographic variables. On multivariate logistic regression when each PC was introduced into the core model (comprising sociodemographic variables and clinic), various interesting findings became apparent. Among PCs, marital and other interpersonal problems, worrying and brooding, financial or other stresses, and bereavement were the psychosocial PCs significantly associated with depression. Fate, will of God, Karma, sorcery, and geomancy were among the cultural causes that were positively associated. In short, PCs implying personal failure, blame, helplessness, or hopelessness were positively associated with depression. Weakness and overwork were the PCs that were negatively associated with depression. Although OR's were greater than 1 in all clinics for bereavement, the P value was significant only in medicine clinic, implying that death of a close one was disturbing enough for medicine patients to get depressed, but not so in other clinics. This is a corroboration of the fear of death being the

crucial feature of NSD for patients in Medicine clinic. Sexual causes had a negative association with depression in Psychiatry clinic, but positive association in Dermatology, implying the positive role of counseling. Currently we are analyzing associations of PCs with the outcome of depression among patients with NSDs.

6.3.4.3 Validation of Comorbid Depression in Clinic Setting

All clinical features of depression also form a part of the PDs of NSDs, either reported spontaneously or elicited on probe questions. All such PDs reflecting depression are highly significantly different between the depressed and the non-depressed groups. This is valuable as it validates the entity of depression in Indian urban patients that emerged as a construction out of PDs of NSDs, and not a diagnostic questionnaire for depression.

6.3.4.4 Role of PCs in Depression

PCs, on the other hand, reflect dominant preoccupations of the culture. PCs significantly associated with depression thus reflect those cultural ideals and processes, which when internalized and striven for by the members of the society - who are non-psychotic, non-substance dependent patients, working hard for improving their financial condition and for gaining appreciation and health - can and do push the vulnerable ones over the brim and into depression. Thus, frustration in attempts to lose weight can give rise to depression in a person with anorexia nervosa, seen more frequently in the developed world. Similar examples could be seen in internet addiction and depression after losing in the online games, or a dedicated social work movement activist getting depressed on disillusionment in various cultures.

6.3.4.5 Cultural Models and Depression

Cultural models were expected to be liberating - in the sense of mitigating stigma of mental illness like in China (21), or of leprosy in India (40), but in contrast, our findings suggest that cultural PCs signified depression, while biological explanations indicated protection from depression. Looking closely into the nature of cultural explanations, it becomes clear that they convey and reflect the sufferer's helplessness rather than empowering the patient. Fate, 'will of God', astrology, or *karma* (a consequence of bad deeds in past life) leave a person in a helpless victim state in the here and now.

Ayurvedic beliefs like vata (wind), pitta (bile), or heat and cold in body are the constructs little understood by patients and used without understanding of Ayurvedic theory (41). Patients learn the language of the clinic they attend and use or translate it appropriately in appropriate settings (21), often taking

care not to voice vocabulary of religious or folk medicine in medical clinics, and vice versa. They accept and justify Ayurvedic treatment to be long-drawn or 'getting the illness out of your system' to explain the worsening of the condition during the course of treatment, thus aiding the chronicity and disability.

We found the evidence for positive association between sexual PCs and depression in the culturally oriented clinics of dermatology and Ayurved, but negative association with depression in psychiatry clinic, where patients are counseled about the harmless nature of sexual physiology.

When biomedical approach fails to relieve symptoms or explain satisfactorily the unresolved suffering, patients tend to fall back on cultural explanations. Cultural models can be understood to be on a deeper layer of mind, taking over when the superficial scientific layers no more contain the anxiety (42,43). Cultural explanatory models, though relatively least prominent, were only second frequent to the most frequent and prominent biological models of our study patients. Cultural physiological explanatory models added to the guilt, shame, self-pity, self-blame, helplessness, hopelessness and fear due to semen loss or masturbation perhaps leading to their veiled communication of PDs or PCs into 'other' category. Biological causes, on the other hand, presumably validated their overwork, exertion, injuries or surgeries, or infections and immune dysfunction causing their illness, thus absolving them from the personal responsibility for the illness, and with the promise of 'cure' the biomedicine purports to make, they continue to feel optimistic about the outcome despite the chronicity, disability, and neglected 'care' dimension of treatment in the clinics of general hospital.

6.3.4.6 Open Questions

Focus on demoralization (37), neuroticism (44), personality factors (7), CBT model (4), Graded Exercise Therapy (45), and clinic specific needs assessment for counseling are immediate directions for important clinical work in relation to depression with NSDs.

6.4 Clinical Implications

6.4.1 General Considerations

Inasmuch as prevalence is no less than anywhere else in the world, but likely to increase in Indian clinical settings, health systems need to be responsive. Littlewood (46) highlighted the situations related to MUS, cultural challenges, and value of the medical anthropological approach with explanatory models that succinctly apply to our study settings. Clinicians need to enhance

cultural competence - capacity to collaborate with patients from different cultures to understand their illness perspective; the gap is considerable in study setting. It is always beneficial to ask the patient about the referral, escort, and reasons for the choice of clinic, which gives valuable information about patients' willingness and motivation to seek help, and need for confidentiality or to include family in the process- both polarities are common in study setting. Patients' clearly detesting psychiatric referral is discussed in Chapter 5. Unpleasant experiences during pre-consultation phase frequently mar therapeutic process.

Exploring patients' unrealistic expectations is equally necessary and useful. Each person assimilates various dimensions of culture to a different degree (36), and through unique filters of perceptions, cognitions, and emotions reflecting own unique values. It is necessary to understand each patient's cultural frame of reference. Each patient is bound to ask, and implicitly always checks on the doctor, "*Is it safe to relate sincerely with you?*" To avoid cross-cultural blunders in any clinical encounter it is mandatory to be culturally literate and aware of the patient's culture and expectations. And also, patients will invariably keep assessing the *efficacy and effectiveness* of doctor's advice, medicine, or action.

Like pharmacological or other biomedical intervention, counseling also has properties like safety, efficacy, therapeutic window, and adverse reactions. What works in one cultural setting need not necessarily work in another. Ironically, a particular diagnosis or intervention may stop working where it originated, but keep on being effective in other settings. For example, NT travelled to and thrived in China, but died down from American nosology and practice. Interestingly, 77% of patients with CFS in US employ complementary alternative medicine, significantly more if they have higher education (47).

Tenets of somatization indicate that MUS including NSDs have symbolic meaning and are a form of communication. It is a skill and a challenge to get patients discuss about issues other than their somatic complaints. It is particularly true for NSDs because they are known to be associated with life events and other stresses, but patients find it hard to relate the stresses to their condition and see them in the context of medical model. Expectations of type of care depend on explanatory models of the individual, particularly PCs, perceived seriousness, most troubling symptom, supports available and expected, and past experiences with care providers. Because our study patients had diverse explanatory models embodying various PCs, their expectations from treatment and care also were multifarious. Unlike patients in UK (48), our study patients freely demanded for more physical investigations.

But regarding the psychosocial situations, they lead and expect the doctor to be more active and directive in their social interpersonal conflicts or family situations. Devising culturally appropriate psychotherapies for patients with different explanatory models (49) is necessary for the application of research findings to the field. Cognitive processing of an experience and putting it into words, albeit with distortions, is essential to facilitate making meaning and to 'move on' (50) after a closure (51) is achieved.

Care during referral, investigations, communicating the results of negative findings of investigations, and during treatment is necessary. Otherwise doctors can harm patients with NSDs as highlighted by Page and Wessely (52).

6.4.2 Meaning of NSD

The meaning of NSD for a particular patient should be clear by reviewing the EMIC interview. It is important to give sufficient time, perhaps several sessions, to understand one's experiences, meanings, and expectations about help. Attempt must be made to look beyond the symptoms. Are the feelings of alienation, disillusionment, and anger predominant? Is there a related context suggesting victimization, exploitation, and helpless muted protests? Are the feelings of working too hard, 'giving too much' to work, family, or friends with not getting enough in return - like the erstwhile hard-striving fatigued individual with CFS? Does the illness mean radical change in lifestyle?

Or is one looking for appreciation and support in the context of ongoing efforts with hope of changing the situation - like the many in our study sample? Explanatory model framework will help identify where the patient locates his origin of the problem. One may wonder are they just explanatory or exploratory maps (53) or explanatory models (54)? Care must be taken not to close the options for the patient in evolving the model from the map.

Eventually the patient may bring other existential issues for discussion such as questioning the meaning of various social institutions like marriage, work, medical or psychiatric treatment, or life itself. Life history approach may enhance the EMIC approach and help patient understand his existential questions and possible options in a better way.

Investigations often reduce the anxiety of the doctor, and also of the patient for a while reducing the costs of service use (55). In Indian setting such decisions have to be individualized based on many contextual variables.

6.4.3 Clinic-specific issues

We know prominent explanatory models from our reference base. It will help attune a clinician to the clinic setting and in enhancing empathy and capacity in respective setting. Counselors for NSDs in psychiatry clinic for example should be responsive to interpersonal and marital conflicts and stresses, in medicine clinic it will be necessary to address issues of elusive physical disease, investigations, health anxiety and fear of death, while in Dermatology and Ayurved clinics counseling may have sexual and other cultural beliefs as the focus with an emphasis on limiting chronicity and disability.

6.4.4 Relevance for other challenging clinical problems

MUS or Functional Somatic Syndromes are regarded as overarching syndromes - of which system-dominant subtypes are considered by internists - e.g. Irritable Bowel Syndrome (IBS), or functional and non-specific arthropathies, or various NSDs. These chronic illnesses share many facets of illness behavior, apart from incompletely understood disease processes, chronic course, and disability. Cultural epidemiological framework will be useful for understanding their illness dimensions. Negative affectivity or neuroticism (56) is reflected in high distress seen on SCL-90 and in narratives of study patients. They also narrated stressful life events, but there has to be prolonged physiological activation (57) following it to manifest biological changes in body. Perseverative cognition (58) manifests through worries, ruminations and brooding and it mediates between stress and physical symptoms through prolonged activation. Our study has covered some of these aspects corroborating biological-physiological-psychological findings. Physiological basis for anxiety-dominant MUS and withdrawal-lassitude dominant MUS is distinct, as shown in recent studies (4). Also, genetic (59) and psychological (60) studies proved that somatic distress and anxiety-depression are separate entities. Although peripheral, these findings are important aspects in biopsychosocial understanding of NSDs.

6.4.5 Bridging research and clinical application of the explanatory model framework

In each patient we must aim at limiting symptoms, curtailing duration of suffering, enhancing productivity, and considering if they can be educators in self-help groups or if they can participate in public health programs to mitigate NSDs. Time spent with a patient initially as discussed under 'general considerations' is mostly fruitful. Direct inquiry into patients' past experi-

ences with help seeking including the sources, referrals, costs - actual and perceived, duration, explanations by provider, patients' reactions to and meaning of those explanations, patients' assessment about the help they received and perceived satisfaction will help into identifying patients' current expectations from treatment and suitability of the clinician's setting to meet those expectations. A 20 year-old driver by occupation who came to psychiatry clinic for 'just weakness' clarified at the end of the EMIC interview:

"I think that instead of giving me medicine for weakness, you are asking me something else. I had loved one girl; thoughts about that keep coming to mind. .."thoughts" keep coming again and again. That doctor asked if I had gone 'out' (commercial sex worker). Why did he ask like that? ... but I knew that you will just ask questions so I purposely didn't come, but your letter (*reminding over a missed appointment following recruitment*) came, therefore, I now came."

Asking directly about mismatch between expectations and help received would be extremely useful in respecting patient autonomy and corroborating patient's consent.

All these components create a reasonably detailed explanatory model of patients, to plan and implement management that includes considering differential diagnoses, investigating to clarify, and treatments that are available to choose from.

Targets of the clinical management must be individualized considering the heterogeneous nature of NSDs and known issues about chronicity, disability, and poor patient-satisfaction. It may be possible to encourage a motivated few to not seek concessions or to not eschew the opportunities as a result of the 'illness', i.e. to relinquish sick-role or 'secondary gain'.

6.5 Public health implications

For planning a public health approach to control a health problem, we need to know epidemiological parameters and people's perceptions and needs about the problem (61). We did not have either of them in case of NSDs, but this thesis has outlined both. We need to sensitize the clinicians of respective specialties for seeing the significance of cultural contexts and range of models that their patients are likely to present with. Cultural epidemiological approach facilitates community engagement and good communication essential for successful public health programs (62). Specific subsets of clinical services in primary care settings and specialty clinics should be responsive to patients with NSDs. Organization and planning of health care networks should facilitate clinical services, nutritional and physical therapy -

GET, rehabilitative counseling to ensure early return to work and social situations, and registry for case-records will offer long-term care, monitoring and evaluation. Brief multidisciplinary treatment programs for FM in tertiary care have been useful (63), which can be relevant for Indian situation.

6.5.1 Primary prevention

Primary prevention should focus on avoidance or mitigation of identified risk factors in vulnerable populations. Because ours was the first clinic-based cross-sectional epidemiological study of NSDs in India, we depend on the risk factors identified in the field by other studies. Childhood adversity, parental disharmony or abuse, and victimization due to violence (64); parental illness (64-66), excessive physical exercise (67), and prolonged recovery after viral or febrile illness (68) are the risk factors known for CFS.

Our study patients have reported exposure to these risk factors among their stressful life events before the onset or among the PCs of NSDs, and have been described in the preceding chapters. Culturally sensitive care around these and other risk factors, such as other stressful life events and PCs, especially peri-partum care, sex education, healthy marital life and family functioning need to be focused in counseling in relevant situations. These areas are important in Indian culture, where breakdowns due to rapid urbanization, changing life-styles, fast material progress, and globalization are affecting the cultural ethos. Preoccupations and brooding about health, financial and interpersonal problems, and family and childcare responsibilities are other significant features of Indian NSD patients. Culturally sensitive counseling of those issues will contribute to primary prevention of NSDs. Clinic-specific counselors without ostensible association with psychiatry department, and 'psychophysiological gym' or 'mind-body gym' may be acceptable to and effective for local persons at risk with just 'tensions and weakness' without a psychiatric diagnostic category. More inputs from local multidisciplinary research in clinical and social psychology are needed to elucidate features of neuroticism or negative affectivity, attachment patterns, and perseverative cognition so as to curtail the distress - a known covariate of NSDs.

6.5.2 Secondary and tertiary prevention

Early detection and prompt treatment constitute the core of secondary prevention; while rehabilitation is the maximum utilization of the remaining potential - tertiary prevention. For lack of prospective longitudinal studies and established public health programs for NSDs, targets and features of secondary and tertiary prevention will overlap in Indian situations. Minimiz-

ing barriers to health care is important. Barriers to health care of NSDs have been studied in detail in US (69), which include symptoms of fatigue, cost and health-insurance considerations, lack of awareness about the services, accessibility to services, and decreasing trust and confidence in doctors.

Aiming to reduce chronicity and disability is best done since the first encounter with a patient with NSD. Clinical contexts of marginalization, delegitimation, and deprivation comprised major barriers to health care for NSD patients in study setting; moreover, psychiatric referrals were perceived to be stigmatizing. Therefore, each patient who has come all the way and waited long before a doctor could see her/him is valuable for prevention in other similar patients. Giving the best care to each patient will not only limit the chronicity and disability, but also motivate other patients with similar presentations to seek help in the clinic this patient has chosen. Word of mouth publicity is very important motivation for and mechanism of accessing care in Indian clinical settings. Qualitative accounts of our patients showed their lack of awareness and unrealistic expectations in a largely paternalistic care model, and doctors restricting to their specialty rather than holistic biopsychosocial evaluation resulting in frequent and inappropriate referrals adding to patient-dissatisfaction. Financial and social adversity was pervasive among patients. Therefore, sensitizing clinicians for early detection and prompt treatment is necessary to prevent chronicity and disability. It is vitally important not to ignore these patients in health care, lest they become chronic attendees constituting significantly increased burden on the systems in addition to personal and social costs for patients. Clinicians must not be prejudiced against various forms of self-help or pluralistic choices of patients - integrative supportive rather than critical approach will help patients be more open and share freely. Emphasis on cultural features and interests of NSDs will help clinicians better understand and relate to various issues about the experience, meaning and expectations of care of their patients. Explanatory model framework will help clinicians in capacity building and empathic listening. Use of non-feature films (70) in training cultural competence and cultural formulation, and cognitive therapy based approaches, including use of theatre and films to give health messages should be useful strategies (71). Indeed, currently training for Cultural Formulation Interview under the aegis of DSM-V is underway in Mumbai (Weiss MG, personal communication, Oct 2011), which will be precious for sensitizing mental health teams in our settings.

6.5.3 Resource allocation

In the coming decade majority of causes of mortality, morbidity, and dis-

ability will be non-communicable diseases, with a significant element of lifestyle and human behavior. Public health priorities for spending have still remained infectious diseases. As a result of this long-standing focus on infectious diseases, even the so-called neglected tropical diseases (72) currently receive more attention than the widespread clinical problem posed by NSDs, which our research in diverse treatment clinics has documented. Colossal costs of NSDs have been documented, for example in UK to be £ 75.5-128.9 million (73), and in US to be \$ 9.1 billion annually (2). The cost effectiveness of CBT has shown benefits (74,75).

6.6 Clinical epidemiology and interdisciplinary collaboration

Patient in clinical setting has to perceive the capacity and empathy of the care-givers. Therefore, counselor in each specialty clinic must know the clinic-specific pathologies. Harmonious collaboration between the counselor and physicians of the specialty clinic is essential. Care-givers must know patients' relating styles and Global Assessment of Relational Functioning (GARF); explanatory themes of typical conflicts, exacerbating and ameliorating factors, and ways to master these conflicts. Maintaining dataset of clinical work with refinements in various measures can generate culturally appropriate tools to measure severity of NSDs, sickness impact scales, indicators of recovery, quality of life and so on.

The documentation of services should generate database for public health indices, such as burden of disease (actual costs, lost wages, opportunity costs, and hidden costs such as stigma) and quality of care. Even in the developed settings, a need for improvement in the measurement-instruments is felt (76,77). Interdisciplinary liaison with scientists from clinical and social psychology, sociology, and anthropology will help valid assessments and constant improvement of measuring these constructs.

Public health data are needed in India, thereby contributing to interests of secondary and tertiary prevention. Patient-based, multi-disease, multi-purpose long-term registries have been functioning in the developed world such as national data bank for rheumatic diseases in US (78) that caters also to fibromyalgia. Such registries will facilitate research and evaluation, in addition to patient monitoring.

6.6.1 Ethnic and religious features of NSDs

Vulnerabilities and resilience may be rooted in ethnic status. Our study showed that depression was more frequent among OBC caste members and dysthymia among Christian religion patients. Studies in this area from UK (79) will be useful. Role of cultural epidemiology in balancing the resource alloca-

tion has been discussed (80).

Narratives of several study-patients showed good acceptance of the condition rather than helplessness. They gave religious and spiritual explanations like 'will of God', without implying helplessness. They denounced the importance or value of body and its suffering, or of marriage, and indicated less distress due to spiritual outlook. There are many caveats while prescribing or endorsing role of religion and culture in healing, but while considering population mental health, Bhui (81) argues that it can definitely be useful to enhance resilience without invoking perceived threat of orthodoxy or religious conversion. He points out that several effective forms of CBT are indeed based on Buddhist philosophy, while Kleinman (82) pointed out that Buddhist religion is the only religion based on psychology rather than cosmology. Religion has been shown to have a mitigating effect in experience of MUS as well as health services utilization (83) in a Canadian community health survey.

6.6.2 Cultural sensitivity in addressing the mhGAP

Mental health Gap Action Program (mhGAP) (84) was evolved to help busy non-specialists in low- and middle-income countries, where psychiatric care is not available. It provides step-wise algorithms to provide essential basic care according to 'assess - decide - manage' paradigm. Cultural epidemiological approach and explanatory model framework will enhance the ease and application of mhGAP.

6.7 Research questions for further study

6.7.1 From our study findings

Depression, somatization, and neurasthenia are the mechanisms of culture to manifest and shape the emotional expression through body, as argued by Kleinman (82). Distinctive nature of depression comorbid with NSDs and its complex relationship with somatization and NSDs are the pivotal issues in cross-cultural psychiatry. Study of NSDs is expected to clarify psychosocial and cultural basis and subtypes of depression. We are analyzing the data for potential predictors of depression from among the sociodemographic variables and meanings of NSDs. In an earlier study (85), beliefs of CFS patients could not distinguish between depressed and non-depressed subgroups. We found that narratives alone could not distinguish them either, but the computation of mean prominence could identify PCs (i.e. beliefs) that could distinguish depressed and non-depressed subgroups of NSD patients. This study should endorse CBT model of MUS, as PCs are important beliefs of patients either leading them toward depression or pro-

tecting them from it. Depression results from the way one thinks, and it can thus be prevented by correcting the cognitive errors.

We have also seen the powerful role of social and cultural contexts in the occurrence and severity of NSDs. Stigma is a powerful operant in social interpersonal crystallization of culture. It may even have a more crucial role in the genesis of NSDs as a mediator of dominant cultural factors, as we have seen that these patients are striving hard for success but are often frustrated and demoralized. We have data about personal, family, and community stigma that will be analyzed and compared to contribute meaningfully to the field of cultural psychiatry and mental health, but also to inform sociological theory and research.

Prevalence of NSDs has been more in women all over the world. We intend to compare the findings of our dataset across gender and clinics and examine the results from medical, psychiatric and cultural perspectives.

Stress and NSDs are intimately related frequently through somatization and depression. Though we asked patients in a separate section about their stresses and their perceived relationship with the illness, we have accounts of stressful events and situations throughout the EMIC narratives. Along with professional psychiatric epidemiological data and stigma itself as a major stress, these findings will give new insights about patients' ways of thinking and coping thus elucidating their vulnerabilities and resilience.

6.7.2 Broader research interests of the field

Various clinical medical, psychiatric, cultural psychiatric and public health studies of NSDs are warranted. Burden of disease studies and documenting experience, meaning and behavior from diverse subcultures of Indian sub-continent will provide valid guidelines for resource allocation and clinical and public health intervention planning.

Sarcopenia is an important lead, which can provide biological bases for cultural differences. Also, retrospective studies of patients from local cohorts of sarcopenia and metabolic syndrome may facilitate study of directional relationships among NSDs, depression, and malnutrition or deconditioning.

Developing countries will need enhanced mental health manpower, especially clinical counselors and rehabilitation social workers. This student had been a part of the development of state-level apex institute in mental health in Maharashtra. He also has experience in clinical practice with a counseling bias. Essentials of culturally competent clinical practice can be delivered through EMIC approach (49). It will be valuable to pursue these clinical and public health development initiatives in Indian urban settings, for which cultural epidemiological approach was shown to be effective in West

Bengal in India.

PCs are cultural products. Their origins, layers, priorities, interrelations with each other or with personality need to be studied. It can be usefully employed to compare SCID-II assessments with Indian cultural understanding of personality, thus validating SCID-II for local setting, as well as to learn more about Indian thinking about personality. Also, PCs will help us explain person's coping in a relationship, or relating pattern. NSDs are known to be associated with preoccupied, fearful, and over-dependent relating styles. There may be PCs specific for each relating style, to shape a particular relationship.

GARF - Global Assessment of Relational Functioning - is an important and untapped dimension of multi-axial DSM. Considering the significance of GARF in mental health, and the capacity of EMIC to assess cultural dimensions, it will be important not only for NSDs (because delegitimation, isolation and marginalization are crucial), but also for cultural psychiatry to understand the role of relational functioning in health and illness.

Social cultural contexts play crucial role not only in generating, maintaining, and ameliorating NSDs but also in protecting persons from getting NSDs. Broader backgrounds of values, policies, and negotiations determine one's perceived worth - thus, fatigue can be very satisfying in one situation, and weakness may prevent another to take a step further. Separate tools can be made for assessing resilience and vulnerability by using EMIC framework, which can be used in various disciplines across a range of conditions. Resilient ones will be successfully resisting the marginalization efforts, and we can study how one can retain health despite oppressive/alienating/anxiety-provoking social-cultural forces.

Vlahov and others (86) depicted the ecological conceptual framework of urban living conditions explaining the positive as well as negative impacts of daily living circumstances through the interaction of global, national, and local factors. They emphasized the need to go beyond the individual risk factors and consider neighborhoods, which may better distinguish unique aspects of various cities. While physical environs like sanitation and clean water could be modifiable for population health, individual perception of community trust was shown to be important determinant self-perceived health in another study on urban health (87). Study of the interactions of various psychological, interpersonal, and social networks in the context of more complex and higher order sociopolitical backdrop is necessary for proactive resilience (88) to mitigate NSDs, as they are not 'disorders', but socio-cultural predicaments.

It is needed to see how depression associated with NSDs is different from

severe melancholic depression. Is it only demoralization that is associated with NSDs? Was the concept of neurotic depression valid and useful, but gotten rid of by atheoretical emphasis of nosology? Did we lose something by typifying depression the way we have? NSD patients with depression are reported to have low self-esteem and several other distinctive features. It will be useful to study depression associated with NSDs in detail, and from various perspectives.

6.8 Conclusion

We aimed to describe the clinical cultural epidemiology of NSDs to improve recognition and treatment in four distinct clinical settings where patients commonly present, and to clarify the relationship between social and cultural concepts and contexts that plays an important role affecting questions of control and prevention in Indian settings. Cultural epidemiological findings provide useful information and understanding that helps to guide the management of these conditions, providing relevant complementary information that overcomes limits of biomedical, psychiatric, and nosological approaches to assessment. We have answered the questions we set out to, and also clarified additional research questions bridging clinical interests and social science, thus reflecting the current trend of scientific progress from Cartesian dualism to a more mature and ever-sophisticating monism alluded to in the Introduction (Chapter 1).

Effective treatment relies on valid diagnosis and evaluation. These chronic disorders span the putative physiological (sarcopenia), psychological (culturally constructed idioms of high distress), psychiatric (depression), social (changing roles of women in the context of preoccupations with progress and success in the context of malignant urbanization), cultural physiological (sexual-reproductive) and cultural traditional (religious philosophical) domains. When one understands the various relevant dimensions of illness affecting each individual, this understanding should guide a logical and feasible approach to management. Although patients have presented in the clinical setting with fatigue and weakness embedded in somatic complaints, the treatment should consider not only the medical and psychiatric or psychophysiological dimensions, but also the sociocultural aspects of patients' experience and meanings, because only both together will make the necessary and sufficient whole for mental health of the individuals and communities.

Illness is conceived and shaped by culture; but illness also influences and shapes culture (19,33). CFS is a good example of the latter - the controversies it generated among clinical and research fields. NSD patients in the study

setting continue to seek treatment in the same clinics despite their grievances about the lacking dimension of 'care'. Clinicians should be able to avert this bitterness by complementing the cultural approach with the clinical before the issues of insurance and disability benefits complicate the situation further. The role of healing and culture, and the soul of doctor-patient relationship are difficult to maintain in the rush of modern clinical practice settings, not only in Europe but now also in India. Effective treatment of NSDs is particularly reliant on an effective treatment alliance, which will benefit from consideration of our findings.

6.9 References

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7. Appendices

7.1 Prevalence survey assessment schedule

OPD Screening for Clinically Significant FAW

Screening/Referral OPD: 1. Dermatology 2. Psychiatry 3. Ayurved 4. Medicine

1. Patient Name: _____

2. Age: _____

3. Sex: _____ 4. OPD No: _____

5. Date: dd mm yy

6. Address: _____

Town/Village: _____

If not Pune City: Tehsil: _____

District: _____ State: _____

7. What is the main problem that brings you here today for treatment?

FAW?	Yes	Possibly	Uncertain	No
	1	2	3	4

8. Are there any other problems that are associated with this condition?

FAW?	Yes	Possibly	Uncertain	No
	1	2	3	4

Appendices

9. Are you able to work as you used to due to this condition?

No	Uncertain	Possibly	Yes
1	2	3	4

10. a. Have fatigue and weakness been a problem for you?

FAW?	Yes	Possibly	Uncertain	No
	1	2	3	4

10. b.If yes or possibly, How long?

>6 months	<6 months	NA
1	2	3

11. Are you actively seeking treatment for it?

FAW?	Yes	Possibly	Uncertain	No
	1	2	3	4

12. Additional Data from Medical OPD Evaluation:

Check the clinical record after the OPD evaluation to determine whether medical assessment indicates adequate or insufficient biomedical basis for symptoms of fatigue and weakness.

Biomedical Basis for FAW?	No	Uncertain	Possibly	Yes
	1	2	3	4

Med Evaluation Findings: _____

7.2 Diagnostic criteria for existing NSD formulations

7.2.1 Diagnostic criteria for CFS (CDC):

A case of the chronic fatigue syndrome is defined by the presence of the following: 1) clinically evaluated, unexplained, persistent or relapsing chronic fatigue that is of new or definite onset (has not been lifelong); is not the result of ongoing exertion; is not substantially alleviated by rest; and results in substantial reduction in previous levels of occupational, educational, social, or personal activities; and 2) the concurrent occurrence of four or more of the following symptoms, all of which must have persisted or recurred during 6 or more consecutive months of illness and must not have predated the fatigue: self-reported impairment in short-term memory or concentration severe enough to cause substantial reduction in previous levels of occupa-

tional, educational, social, or personal activities; sore throat; tender cervical or axillary lymph nodes; muscle pain, multijoint pain without joint swelling or redness; headaches of a new type, pattern, or severity; unrefreshing sleep; and postexertional malaise lasting more than 24 hours.

7.2.2 Diagnostic criteria for Neurasthenia (ICD-10)

A. Either of the following must be present:

- 1). Persistent and distressing complaints of feelings of exhaustion after a minor mental effort (such as performing or attempting to perform everyday tasks that do not require unusual mental effort);
- 2). Persistent and distressing complaints of feelings of fatigue and bodily weakness after minor physical effort;

At least three of the following symptoms must be present:

1. feelings of muscular aches and pains
2. dizziness
3. tension headaches
4. sleep disturbances
5. inability to relax
6. irritability
7. dyspepsia

For at least six months the individual is unable to recover from the symptoms in criterion A (1) or (2) by means of rest, relaxation or entertainment.

The duration of disorder is at least 3 months.

Most commonly used exclusion clause: The disorder does not occur in the presence of organic emotionally labile disorder, post encephalitic syndrome, post-concussional syndrome, mood disorders, panic disorder, or generalized anxiety disorder.

7.2.3 Diagnostic criteria for Neurasthenia (CCMD-2)

B. At least three of the following:

(1). 'Weakness' symptoms: mental fatigue, lack of energy, slowness of thinking, difficulty in or inability to sustain concentration, subjective experience of poor memory.

(2). 'Emotional' symptoms: easily worried, irritable, often accompanied by secondary anxiety and dysphoria.

(3). 'Excitement' symptoms: easily excitable, past memories and associations easily triggered and cannot be controlled or diverted; the excitement is accompanied by dysphoric feelings and not by hypertalkativeness or hyperactivity.

(4). Tension induced pain: tension headache or myalgia.

(5). Sleep disturbances: difficulties in falling asleep, bothered by frequent dreams, feeling tired after wake-up, subjective feeling of lack of sleep (although objectively having fallen asleep, patient insists that he/she has not slept), disturbance in sleep-wake rhythm (insomnia at night, sleepy or tired during the day).

C. Symptoms severe enough to cause at least one of the following:

- (1). Disrupt work, study, daily life, or social function;
- (2). Cause significant, persistent, 'inescapable' distress;
- (3). Actively seeking treatment.

D. The clinical course should fulfill one of the following:

- (1). If symptoms are episodic there should be at least one previous episode;
- (2). If symptoms are continuous, the course should be longer than 3 months.

7.2.4 Diagnostic criteria for Neurasthenia (DSM-IV-draft)

E. For at least six months, persistent complaints of mental fatigue, physical fatigue, or body weakness or exhaustion after performing (or attempting to perform) everyday activities that do not require unusual mental effort or physical effort.

F. At least two of the following symptoms must be present:

1. feelings of muscular aches and pains
2. dizziness
3. tension headaches
4. sleep disturbances
5. inability to relax
6. irritability
7. dyspepsia

G. The symptoms cause significant impairment in social or occupational functioning, or cause marked distress.

H. After appropriate investigation, the symptoms cannot be explained by known non-psychiatric medical condition or pathophysiologic mechanism (e.g. effects of injury, medication, drugs, or alcohol).

7.3 Biomedical and anthropometric parameters

Pt study No.

Date

7.3.1 LAB REPORT

Name

Hemogram

Hb Total WBC

P _____, L _____, E _____, M _____,

B _____

RBCs

Parasite

Paltelet

URINE (R)

STOOL (R)

BSL (F)

BUL

7.3.2 ANTHROPOMETRIC MEASUREMENTS

Height

Weight

Mid-Arm Circumference

Triceps Skin-fold Thickness

PHYSICIAN'S COMMENT : Clinically NAD / Bio-Medical Basis: positive

Adv :

7.4 SCID-P (Version 1.0) SUPPLEMENT (1) CFS & Neurasthenia J.1

APPENDIX R.

Keh-Ming Lin, M. D., M. P. H.

Neurasthenia & CFS: A

Clinical & Anthropological Study

7.4.1 NEURASTHENIA (CCMD-2)* (CURRENT ONLY)

CONSIDER THIS SECTION ONLY IF THERE IS A CURRENT DISTURBANCE AND IT IS NOT DUE TO ANY ORGANIC CAUSES. OTHERWISE, CHECK HERE ___END OF SCID SUPPLEMENT.

<u>In the last</u> <u>three months ...</u>	<u>NEURASTHENIA</u> <u>(CCMD-2 CRITERIA)</u>				
	A. At least three of the following				
.. do you often tried? (Do you have difficult in concentration? slowness in thinking?)	1. "weakness" symptoms; mental fatigue, lack of energy slowness of thinking difficulty in or inability to sustain concentration, subjective experience of poor memory.	?	1	2	3
..do you easily worry or feel annoyed or irritable?	2."emotional" symptoms easily worried, irritable, often accompanied by secondary anxiety and dysphoria.	?	1	2	3
..do you often recall or think too much and hardly stop it? (Can you give me an example?)	3. "excitement" symptoms: easily excitable, past memories and associations easily triggered and cannot be controlled or diverted the "excitement" is accompanied by dysphoric feelings and not by hyper-talkativeness or hyperactivity	?	1	2	3

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

..do you feel muscle discomfort or pain, or headache? (Which part of the head?) 4. Tension induced pain: tension headache or myalgia ? 1 2 3

..How is your sleep? (Difficulty falling asleep? staying asleep? sleeping too much? Dreaming too much? feeling tired upon awakening? feeling sleepy) 5. sleep disturbance : difficulties in falling asleep, bothered by frequent dreams, feeling tired after wake-up subjective feeling of lack of sleep (although objectively having fallen asleep, patient insists that he/she has not slept disturbance in sleepwake rhythm (insomnia at night, sleepy or tired during the day?) ? 1 2 3

SCID-P (Version 1.0) SUPPLEMENT (2)

7.4.2 CFS & Neurasthenia

..How is your sleep? (Difficulty falling asleep? staying asleep? sleeping too much?) AT LEAST 3 OF THE ABOVE SXS [A(1-5)] RATED 3 1 | 3
Go to CFS & NEURASTHENIA J.3

B. Symptoms severe enough to cause at least one of the following

Have these symptoms interfered with your daily activities, such as 1) disrupt work, study, daily life, or social function; ? 1 2 3
Go to C

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

Appendices

work, study,
recreation, or
social contact?

Have you felt distress because of these experiences? 2) cause significant, persistent, “inescapable” distress; ? 1 2 3
|
Go to C

Have you sought help or treatment because of these experiences? 3) actively seeking treatment. ? 1 2 3
|
Go to C
Go to CFS &
NEURASTHENIA J.3

C. The clinical course should fulfill one of the following.

How long have these symptoms lasted this time? (More than 3 months) 1) If symptoms are episodic, there should be at least one previous episode;

2) If symptoms are continuous the course should be longer than 3 months. ? 1 2 3
|
End of SCID
Supplement
Neurasthenia

LENGTH OF CURRENT EPISODE:

(Months/Years)

SCID-P (Version 1.0) CRITERIA FOR CFS (CDC) AND SUPPLEMENT NEURATHENIA (DSM-IV AND (3) CFS & ICD-10) Neurasthenia
 During the last six months, would you say that you have

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

felt tired or fatigued most of the time (more days than not)

would you say that your daily activities have been reduced because of tiredness or fatigue? (How much? More than 50%)

A1. New onset of persistent or relapsing, debilitating fatigue or easy fatigability in a person who has no previous history of similar symptoms that does not resolve with bed-rest for a period of at least 6 months — CDC —

? 1 2 3

When this condition of fatigue first started, was it a completely new experience? (Had you been usually full of energy? Rarely bothered by excessive tiredness?)

During the last six months, would you say that you have felt body weakness or exhaustion after performing daily activities? Or feeling mentally tired after minimal mental efforts?

A2. For at least 6 months, persistent complaints of mental fatigue, physical fatigue, or body weakness or exhaustion after performing (or attempting to perform) everyday activities that do not require unusual mental or physical effort — DSM-IV—

? 1 2 3

Are you able to recover from

A3. For at least 6 months the individual is unable to recover

? 1 2 3

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

Appendices

<p>feelings of fatigue or tiredness by rest, relaxation or recreation?</p>	<p>from the feelings of fatigue by normal periods of rest, relaxation or entertainment. —ICD-10—</p>				
	<p>AT LEAST ONE OF THE ANSWERS TO QUESTIONS A1-A3 RATED 3</p>	<p>1</p>	<p> </p>	<p>3</p>	
					<p>End of SCID Supplement</p>
<p>Now I am going to ask you some questions about other symptoms that often go along with being tired. Thinking about those <u>periods in the past six months when feeling tired or fatigue.</u></p>	<p>B. Minor symptom criteria. To fulfill a symptom criterion, a symptom must have begun at or after the time of onset of increased fatigability and must have persisted or recurred over a period of at least 6 months (individual symptoms may not have occurred simultaneously) Symptoms include:</p>				
<p>Do you often feel chilly or find that you have a mild fever? In other words, the oral temperature is between 37.5 C to 38.6 C? (99.5 F to 101.5 F)</p>	<p>1) Mild fever — oral temperature between 37.5 C and 38.6 C, if measured by the patient - or chillis. (Note: oral temperatures of greater than 38.6 C are less compatible with chronic fatigue syndrome and should prompt studies for other causes of illness) —CDC-</p>	<p>?</p>	<p>1</p>	<p>2</p>	<p>3</p>
<p>Do you have a sore throat?</p>	<p>2) sore throat — CDC —</p>	<p>?</p>	<p>1</p>	<p>2</p>	<p>3</p>
<p>Do you have</p>	<p>3) painful lymph nodes in the</p>	<p>?</p>	<p>1</p>	<p>2</p>	<p>3</p>

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

Clinical Cultural Epidemiology of NSDs in Pune

painful nodes in the front or both sides of your neck?	anterior or posterior cervical or axillary distribution — CDC —				
Do you often tire easily after moderate amount of exercise and have difficulty recovering from it? (continued for more than one day?)	4) prolonged (24 hours or greater) generalized fatigue after levels of exercise that would have been easily tolerated patient's premorbid state — CDC —	?	1	2	3
Are you sensitive to light?	5) Neuropsychologic complaints (5a) photophobia — CDC —	?	1	2	3
Do you have blind spots in your vision? If Yes, can you give me an example?	(5b) transient visual scotomata — CDC — Make sure the symptom is not caused by any physical diseases medications.	?	1	2	3
Do you often have feeling of confusion?	(5c) confusion — CDC —	?	1	2	3
Do you often have experience poor memory? If Yes, can you give me an example?	(5d) forgetfulness — CDC — Impaired Short - Term Memory CODE 3	?	1	2	3
Do you often have difficulty thinking?	(5e) difficulty thinking — CDC-	?	1	2	3
Do you often have difficulty in	(5f) inability to concentrate —CDC—	?	1	2	3

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

Appendices

concentration?

Do you often feel depressed? (5g) depression — CDC — ? 1 2 3

Do you often irritable? (5h) excessive irritability —CDC— and DSM-IV & ICD-10- ? 1 2 3
 ?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

Do you often have profound muscle weakness? (5i) AT LEAST ONE OF THE ITEMS 5a TO 5h RATED 3? ? 1 2 3

Do you feel muscle discomfort or pain? 6) unexplained generalized muscle weakness — CDC — ? 1 2 3

Do you have migratory joint pain without joint swelling or redness? 7) muscle discomfort or myalgia —CDC AND DSM-IV & ICD -10— 8) migratory arthralgia without joint swelling or redness — CDC — ? 1 2 3

Do you have headaches? What kind of headaches? 9) tension headaches —DSM -IV & ICD - 10 ? 1 2 3

Is it over you whole head? And is it different from what you have experienced before? (9a) generalized headaches (of a type, severity, or pattern that is different from headaches the patient may have had in the premorbid state) —CDC — ? 1 2 3

How is your sleep? Having trouble falling or staying asleep? Or sleeping 10) sleep disturbance (hypersomnia or insomnia) — CDC— ? 1 2 3

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

Clinical Cultural Epidemiology of NSDs in Pune

too much? Or any other kind of sleeping problem?	(10a) sleep disturbance — DSM-IV & ICD-10—	?	1	2	3
Did most symptoms that you have simultaneously occur within several hours or a few days?	11) description of a main symptoms compiles as initially developing over a few hours to a few days(this is not a true symptom, but may be considered as equivalent to the above symptoms in meeting the requirement of the case definition) — CDC —	?	1	2	3
Do you often feel dizzy?	12) dizziness —DSM-IV & ICD-10—	?	1	2	3
Are you often unable to relax?	13) inability to relax —DSM-IV & ICD 10—	?	1	2	3
Do you have symptoms that are accused by indigestion, such as deching, bloating, or abdominal discomfort, or abdominal pain?	14) dyspesia—DSM-IV&ICD-10— E1. A1RATED 3 AND AT LEAST 8 OR MORE OF B SECTION ITEMS 1-4, 5I, 6-8, 9a, 10, 11 RATED 3? — CDC —	?	1	2	3
Have these symptoms interfered with your daily activities, such as work, study, recreation or social contact? (How much?)	E2. A2 RATED 3 AND AT LEAST 2 OF ITEMS 5h, 7, 9, 10a, 12-14 RATED 3? —DSM-IV	1			3

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

Appendices

Have felt distressed or sought help or treatment because of these uncomfortable experience?	E3. A3 RATED 3 AND AT LEAST 3 OF ITEMS 5h, 7, 9, 10a, 12-14 RATED 3? —ICD —10—	1			3
					Neurosthenia (ICD-10)
Just before this began, were you physically ill? (What did doctor say? Did you take any lab tests? What were the results? Were you taking any street drugs or medication?)	C1. The symptoms are severe enough daily activity below 50% of the patients pre-morbid activity level — CDC —	?	1	2	3
	C2. The symptoms cause significant impairment in social or occupational functioning, or cause marked distress —DSM-IV—	?	1	2	3
	D1. Other clinical conditions that may produce similar symptoms must be excluded by thorough evaluation based on history, physical examination, and appropriate laboratory findings — CDC —	?	1	2	3
	D2. After appropriate investigation, the symptoms cannot be explained by known non psychiatric medical condition or pathophysiologic mechanism (e.g. effects of injury, medication, drugs, or alcohol) —DSM-IV—	?	1	2	3
	E1, C1, AND D1 RATED 3?	1			3
					CFS (CDC)

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

Cliniical Cultural Epidemiology of NSDs in Pune

E2, C2, AND D2 RATED 3?	1	3
		Neurosthena
		(DSM-IV)
		End of SCID
		supplement

?= inadequate 1= absent or false 2= subthreshold 3= threshold or true

8. Curriculum Vitae

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Sex Male
Marital Status Married
Nationality Indian

Education

Since Aug 2010 PhD student at Swiss TPH, University of Basel,
Switzerland
1981-1983 MD (Psychiatry), BJ Medical College, University of
Pune
1979-1980 Compulsory Internship (District and Rural)
1975-1979 MBBS, BJ Medical College, University of Pune
1973-1975 Pre-Degree and Pre-Professional college, MES AG
College, Pune
1973 Secondary School Certificate Examination, NMV
High School, Pune

Work Experience

2008 till date Head, Psychiatry Unit, KEM Hospital, Pune 11
2006-2008 Consultant, Psychiatry Unit, KEM Hospital, Pune 11

2004-2005	Psychiatrist, Regional Mental Hospital, Yerawada, Pune
2002-2004	Psychiatrist, Maharashtra Institute of Mental Health, Sassoon Hospital Campus, Pune
1999-2002	Psychiatrist, Regional Mental Hospital, Yerawada, Pune
1990-1999	Psychiatrist, Maharashtra Institute of Mental Health, Sassoon Hospital Campus, Pune
1989-1990	Psychiatrist, Regional Mental Hospital, Yerawada, Pune
1988-1989	Psychiatrist, NM Mental Hospital, Thane, Mumbai
1985-1988	Psychiatrist, Regional Mental Hospital, Yerawada, Pune
1984-1985	Medical officer, Central Institute of Mental Health and Research, Yerawada, Pune

Work experience includes visits to District Hospitals at Ahmednagar, Jalna, Satara, and to Rural Hospitals in Pune district; and work on deputation at Central Prisons in Nagpur and Pune.

Clinical Practice Experience

1984 till date Clinical Psychiatry Practice in Pune

Research Experience

2003-till date Member of Cultural Epidemiology Research Group
1999-2003 Co-principal Investigator, Research Project: Cultural Disorders of Fatigue and Weakness in Pune, India

Research experience includes work as consultant on a project on psychopathological variables involved in HIV awareness and partner support conducted at National AIDS Research Institute at Pune, and as consultant on a project on domestic violence conducted by KEM Hospital, Pune.

Publications:

1. **Paralikar V**, Sarmukaddam S, Deshpande R, Goyal V, Agashe M, Weiss M. (2011) Cultural epidemiology of neurasthenia spectrum disorders in four general hospital outpatient clinics of urban Pune, India. *Transcultural Psychiatry* 48(3) 257-283. doi:10.1177/

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9. Agashe M., **Paralikar V.**, Weiss M. (1999) Explanatory Model Interview Catalog (EMIC), (Ver. 6), for use in the project 'Cultural Disorders of Fatigue And Weakness in India'. MIMH, Pune & STI, Basel
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12. Agashe M, Pande N, Gulabani D, **Paraliker VP (1989)**. Project Report: the State Training & Research Institute for Mental Health & Neurosciences (The STRIMHANS report), Project report for the State Government.