

Sexual Dysfunction among Men in Rural Tamil Nadu: Nature, Prevalence, Clinical Features, and Explanatory Models

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ABSTRACT

Background and Aim: There is a dearth of community data on nature, prevalence, clinical features, and explanatory models related to sexual dysfunction among men, particularly from rural India. This study attempted to examine different aspects of male sexual dysfunction and misconceptions in the community. **Materials and Methods:** Villages in Kaniyambadi Block, Vellore district were stratified, and four were randomly selected. Men living in these villages were recruited for the study. The following instruments were administered: (i) International Index of Erectile Function, (ii) Chinese Index of Premature Ejaculation (iii) Short Explanatory Model Interview, and (iv) Revised Clinical Interview Schedule. The data were analyzed using standard bivariate and multivariate statistics. **Results:** A total of 211 men were recruited. The majority were middle-aged (mean 40.73 years), literate (84.8%), married, and with children (72%), from nuclear families (99.6%), followed the Hindu religion (87.7%), reported satisfaction with their marriage (51.2%), had a single sexual partner (99.5%), and practised contraception (88.2%). A minority reported erectile dysfunction (29.9%), premature ejaculation (19.4%), and depression/anxiety (30.8%). Erectile dysfunction was associated with single marital status ($P < 0.001$), premature ejaculation ($P < 0.001$), worry about nocturnal emission and loss of semen ($P < 0.02$), and punishment by God as causal beliefs ($P < 0.001$). Premature ejaculation was associated with diabetes mellitus ($P < 0.05$), alcohol use ($P < 0.05$), anxiety and depression ($P < 0.01$), guilt about masturbation ($P < 0.001$), and belief that nocturnal emission is causal ($P < 0.001$) and erectile dysfunction ($P < 0.05$). **Conclusion:** Sexual misconception and dysfunction in men are significant problems in rural communities in India. They mandate the need for sex education in schools and the empowerment of physicians in primary and secondary care to manage such problems.

Key words: Community, erectile dysfunction, India, premature ejaculation, psychiatric morbidity

INTRODUCTION


Sexual disorders are complex, diverse, and associated with multiple biological, medical, and psychological

factors. Sexual dysfunction is common among men who attend general hospitals.^[1] However, it is often

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not recognized, diagnosed, and managed.^[1] While hospital-based studies have been done,^[1-3] data on male sexual dysfunction in the community from the Indian subcontinent are very limited.^[4-6] Rao *et al.* examined sexual dysfunction in rural Mysore and reported erectile dysfunction (15.77%), premature ejaculation (8.76%), and hypoactive sexual desire disorder (2.56%) in the population.^[4] Nevertheless, there is a dearth of data on sexual dysfunction among men from rural India in general and Tamil Nadu in particular. We attempted to estimate the prevalence and nature of male sexual dysfunction in a rural community of Tamil Nadu and to elicit the explanatory models of illness and risk factors. It also attempted to study the relationship between sexual dysfunctions and sexual misconceptions.

MATERIALS AND METHODS

Setting

The institution has been working in Kaniyambadi block for the past 50 years. This region in Tamil Nadu is a geographically defined area of 127.4 sq. km, with a population of about 1,10,000. The community health programme operates in all villages in the area. A large proportion of the population is from the lower socioeconomic strata. Agriculture and animal husbandry are the major occupations.

Sample

Kaniyambadi block was stratified based on the median distance from Vellore town. Four large villages, out of 85 villages, were randomly selected, with two villages being close to Vellore and two farther away. Men above the age of 18 years who spoke Tamil, the local language, were eligible for the study. The researcher went to the center of each village and contacted 50 consecutive men. A community health worker introduced the researcher (KSV) to the subjects, explained the details of the study, assured confidentiality, and obtained informed consent. This study was neither part of a camp nor was it advertised.

Assessment

The following instruments were employed:

(i) *International Index of Erectile Function (IIEF-5)*: This instrument is regarded as the 'gold standard' measure to assess treatment outcome for clinical trials in erectile dysfunction, regardless of the type of treatment, intervention, or study population under investigation.^[7-9] It has been linguistically validated and is currently available in 32 languages worldwide. IIEF-5, an abridged five-item version of the IIEF,^[10-13] was developed and has been separately validated as a brief, easily administered diagnostic tool. This scale is available in Tamil and has been

used locally.^[1,3] The threshold of 5–7 was used to determine caseness^[11]

(ii) *Chinese Index of Premature Ejaculation (CIPE-5)*: CIPE-5 is an abridged version of CIPE, which has been found to be as sensitive and specific as the longer version.^[14] CIPE-5 focuses on ejaculatory latency, difficulty in delaying ejaculation, sexual satisfaction of patient, sexual satisfaction of partner, and feelings of anxiety or depression in sexual activity. The scale is available in Tamil and has been used in local investigations.^[1] The threshold of less than 9 was used to determine caseness^[14]

(iii) *Sexual History Interview*: This interview focuses on questions which are part of routine clinical examinations. Details related to patterns of sexual behavior, beliefs about sexual activity, and opinions about contraception and HIV/AIDS, which were not part of the IIEF-5 and the CIPE-5 but which were relevant to a comprehensive assessment, were included. The structured format provided uniformity in data collection. The tool has been used in earlier investigations and is available in Tamil^[1]

(iv) *Short Explanatory Model Interview (SEMI)*:^[15] The interview, based on Kleinman's original concepts, explores emic perspectives of illness and employs open-ended semistructured questions. The subjects are encouraged to talk openly about their attitudes and experiences, with the aim of eliciting concepts held and their relationship to current situations and culture. The interview uses open-ended questions to examine the nature of the presenting problems; their causes, impact, and severity; help-seeking; and the expectations of treatment. It employs probes to explore different issues. It records verbatim responses. Its format also allows for qualitative and quantitative analyses. Major themes are identified and recorded and are analyzed semiquantitatively and coded dichotomously as present/absent. The method of analysis has been standardised. The SEMI takes 20–30 min to complete. The nontechnical nature of the instrument allows for the translation and adoption into different languages for use in different cultures. The SEMI has been used and translated into many languages, including Tamil,^[16,17] and has been employed to study sexual concerns in Vellore^[1,18]

(v) *Revised Clinical Interview Schedule (CIS-R)*:^[19] This is a standard instrument to assess anxiety, depression, and common mental disorders. It is a semistructured interview and has algorithms to arrive at an International classification of diseases (ICD) 10 diagnosis. It has been translated into many languages and has been used across different cultures and countries. The Tamil version has been employed in many studies.^[20,21] The threshold of 11/12 was employed to determine psychiatric caseness.^[19]

(vi) A Special Proforma was Used to Obtain Sociodemographic and Clinical Details: It included age, marital status, residence, education, occupation, income, diet, and history of physical and psychiatric illness and substance use.

A trained psychiatrist (KSV) administered all the instruments.

Statistics

Mean and standard deviation were used to describe continuous variables, while frequency distributions were obtained for categorical data. The *Chi*-square test and Student's *t*-test were employed to assess the significance of bivariate associations for the categorical and continuous variables, respectively. Logistic regression analysis was used to adjust for age and marital status. Odds ratio (OR) and 95% confidence interval (CI) were calculated. Statistical Package for Social Sciences (SPSS) version 16 was used to analyze the data.

The following formula and estimates were used to calculate sample size:

$1.96 \times 1.96 \times pq/d^2$ where *P* is prevalence, *q* = (100-*p*) and *d* is precision. The prevalence estimate of 48% and precision of 7% were taken from a study done in the region.^[1] The sample size obtained was 196.

The study protocol was approved by the Institutional Review Board.

RESULTS

A total of 213 were contacted and 211 (99.06%) agreed to be interviewed. And 90% of the subjects who participated were interviewed alone and in the privacy of their homes. The rest were interviewed in public spaces, but without the presence of other people. The interviewer waited for the subjects to be alone prior to asking questions and paused the interview if interrupted.

The sociodemographic and clinical characteristics are documented in Table 1. The majority were middle-aged men, literate, married and with children, from nuclear families, followed the Hindu religion, reported satisfaction with their marriage, had a single sexual partner, and practised contraception. A minority reported erectile dysfunction, premature ejaculation, or other problems with sexual function.

Table 2 records the factors associated with erectile dysfunction. On bivariate analysis, erectile dysfunction was associated with age, marital status, number of children, alcohol use, worry about nocturnal

Table 1: Sociodemographic, clinical, and sexual profile of sample

Characteristic	Frequency (%) mean (SD)
Sociodemographic and clinical profile	
Age (in years)	40.73 (13.55)
Literacy-Illiterate	32 (15.2)
Family-Nuclear	210 (99.6)
Monthly family income (in rupees)	7027 (6540)
Religion-Hindu	185 (87.7)
Marital status-single	48 (22.7)
Married with children	152 (72)
Diabetes	11 (5.2)
Hypertension	10 (4.7)
Alcohol use	65 (30.8)
Nicotine use	22 (10.4)
Sexual history	
Satisfaction with sexual functioning present	7 (3.3)
Reduction in sexual desire reported	38 (18.0)
Problems with orgasm reported	52 (24.6)
Pain during intercourse reported	3 (1.4)
Single partner	210 (99.5)
Satisfaction with marriage	83 (51.2)
Use of condoms	7 (3.3)
Contraception - Partner using Intrauterine contraceptive device (IUCD), oral, surgical sterilization	186 (88.2)
Source of initial knowledge about sex	
Friends	19 (9.0)
Relatives	48 (22.7)
Books	9 (4.3)
Magazines	4 (1.9)
Movies	18 (8.5)
Experience within marriage	11 (5.2)
Experience outside marriage	102 (48.3)
Masturbation	37 (17.5)
Worry about loss of semen	16 (7.6)
Purpose of sex (multiple responses)*	
For procreation	15
For recreation	175
A sin	0
A duty	19
Clinical variables	
Erectile dysfunction	63 (29.9)
Premature ejaculation	41 (19.4)
Revised clinical interview schedule (CISR) case-depression anxiety	65 (30.8)

emission, guilt due to masturbation, and viewing it as a punishment by God. As age and marital status were related to erectile dysfunction, they were included in the multivariate analysis to adjust for their confounding effects. The factors which remained statistically significantly associated with erectile dysfunction after multivariate analysis using logistic regression, which adjusted for the effects of age and marital status, were single marital status, premature ejaculation, worry about nocturnal emission and loss of semen, and punishment by God as causal belief.

Table 2: Factors associated with erectile dysfunction

Factor	Erectile dysfunction Case <i>n</i> =63 Mean (sd) No. (%)	Erectile dysfunction noncase <i>n</i> =148 Mean (sd) No. (%)	Bivariate statistics <i>t</i> value; df, <i>P</i> χ^2 ;df; <i>P</i>	Multivariate statistics adjusted for age and marital status OR; 95% CI; <i>P</i>
Age (in years)	31.90 (14.60)	44.49 (11.16)	-6.12; 94.22; <0.001	1.03;0.98-1.07;0.25
Marital status-single	44 (69.84)	4 (2.70)	113.3; 1; <0.001	143.87;32.1-644.8; <0.001
3 or more children	12 (19.05)	103 (69.59)	45.53; 1; <0.001	0.47;0.15-1.43; 0.181
Alcohol use	12 (19.05)	53 (35.81)	5.83; 1; 0.01	1.07;0.41-2.77; 0.889
Premature ejaculation	16 (25.40)	25 (16.89)	2.04; 1; 0.15	5.16; 1.91-13.97; 0.001
Belief that nocturnal emission as causal	9 (14.29)	3 (2.03)	12.38;1;<0.001	11.58; 1.60-83.8; 0.015
Belief that masturbation as causal	7 (11.11)	2 (1.35)	10.31; 1;0.001	8.08; 0.72-90.24; 0.090
Belief that punishment from God as causal	5 (7.94)	2 (1.35)	5.97; 1; 0.015	26.97;4.13-176.2; 0.001

The following variables were not significantly related to erectile dysfunction: literacy, family type, individual income, family income, and family history of mental illness, diabetes, hypertension, psychiatric case-depression and anxiety, reduced libido, orgasm, painful intercourse, multiple partners, protection from STD/HIV, contraception, medical or nursing consultation, causation due to black magic, karma, and diet

Table 3: Factors associated with premature ejaculation

Factor	Premature ejaculation Case <i>n</i> =41	Premature ejaculation noncase <i>n</i> =170	Bivariate statistics <i>t</i> value; df, <i>P</i> χ^2 ;df; <i>P</i>	Multivariate statistics adjusted for age and marital status OR; 95% CI; <i>P</i>
Age (in years)	45.07 (13.46)	39.69 (13.40)	2.31; 209; 0.022	0.97; 0.94-1.003; 0.078
Marital status-single	6 (14.63)	42 (24.7)	1.91; 1; 0.167	1.03; 0.997-1.06; 0.078
Erectile dysfunction	18 (43.9)	63 (37.06)	0.658; 1; 0.42	2.29; 1.006-5.21; 0.048
Diabetes mellitus	6 (14.3)	5 (2.9)	9.14;1; 0.003	4.05; 1.07-15.0; 0.039
Alcohol use	19 (46.3)	46 (27.1)	5.76; 1; 0.016	2.08;1.007-4.3; 0.048
Anxiety or depression present	22 (53.7)	44 (27.1)	11.86; 1; 0.001	2.86; 1.37-5.98;0.005
Guilt due masturbation	6 (14.6)	3 (1.8)	13.4; 1; <0.001	30.74; 5.54-170.6; <0.001
Belief that nocturnal emission as causal	8 (19.5)	4 (1.8)	18.14; 1; <0.001	35.31; 7.36-169.4; <0.001

The following variables were not significantly related to premature ejaculation: literacy, family type, individual income, family income, and family history of mental illness, hypertension, psychiatric case-depression and anxiety, reduced libido, orgasm, painful intercourse, multiple partners, protection from STD/HIV, contraception, medical or nursing consultation, causation due to black magic, karma, and diet

Table 3 records the factors associated with premature ejaculation. Premature ejaculation was associated with age, diabetes mellitus, alcohol use, anxiety and depression, guilt about masturbation, and belief that nocturnal emission and loss of semen are causal. These and erectile dysfunction were significant on multivariate analysis using logistic regression to adjust for the effects of age and marital status.

DISCUSSION

This study adds to the limited data from rural India. While Rao *et al.* studied sexual dysfunction in a single village,^[4] this study examined sexual problems among a sample of men drawn from an administrative block. In addition, it also examined common mental disorders, common risk factors, and explanatory models related to sexual problems. While the majority of men who participated in the community survey did not report sexual dysfunction, a minority (20%–30%) reported different sexual problems. The results of this study document a slightly higher proportion of men with

sexual dysfunction when compared to the study by Rao *et al.*^[4] The dearth of community data from India prevent comparison across India, but the number of men reporting sexual problems demand the need for systematic and multicentered epidemiological studies to document sexual problems across the country. Nevertheless, the presence of sexual problems also suggests the need for empowering primary care physicians in managing sexual dysfunctions presenting to primary and secondary hospitals and identifying people with severe problems for specialist referral.

The correlation between sexual problems and sexual misconceptions demands comment. The culture of the Indian subcontinent in general and systems of indigenous medicine in particular tends to explain a variety of somatic symptoms using sexual idioms. The *dhat syndrome* typifies common clinical presentations related to sexual concerns among men who attribute weakness, somatic, and psychological problems to the loss of semen through nocturnal emission, masturbation, sex, etc. These findings, also commonly documented in hospital samples,

mandate interventions like education related to sex and sexual functioning for adolescents and adults.

The lack of emphasis -and expertise within primary and secondary care means that men with sexual concerns shop for healing and cure, making them vulnerable to exploitation.^[1] Many indigenous systems of medicine tend to favor sexual explanatory models for common mental disorders, particularly in men who present with clinical features of dhat syndrome. Reinforcing sexual misconceptions related to masturbation and nocturnal emission only increase sexual anxiety and is counterproductive. Similarly, the focus on medication and organic remedies for premature ejaculation, which is easily managed with specific suggestions, actually takes away the confidence required for successful performance.

The association between common mental disorders (e.g., anxiety and depression) on the one hand with sexual dysfunction on the other also merits comment.^[1] The cross-sectional nature of the study design prevents us from commenting on the direction of causality. Sexual dysfunction can produce symptoms of depression, anxiety, and explanatory models and vice versa. In addition, antidepressant medications are well known to cause sexual dysfunction. The reluctance by patients and physicians to discuss sexual issues, which are considered sensitive or embarrassing, complicates the matter. The perception that sexual problems are not 'serious', and inadequate physician skill and confidence in managing these problems contribute to poor clinical practice. The excessive reliance on culturally acceptable, traditional forms of treatments/resources (e.g., traditional healers) and alternative systems of medicine often lead to underreporting of these symptoms in healthcare settings.

These findings also mandate sex education in high schools and colleges to teach issues related to anatomy and sexual function in order to reduce misconceptions and empower young men. The mass media should also be harnessed to educate people about sexual function.

The strengths of the study include a stratified sampling of villages, standard assessments, and multivariate analysis to adjust for common confounders. Its limitations include the use of brief assessments and the fact that consecutive men available in the village were recruited, rather than through a house-to-house survey. Although confidentiality was assured, the possibility of socially desirable responses cannot be fully excluded.

CONCLUSION

Sexual misconceptions and dysfunction are common in the community; however, they are rarely discussed,

diagnosed, or managed in primary and secondary care. Sex education in schools is mandatory to reduce sexual misconceptions in society. It is essential that physicians are empowered and comfortable discussing issues related to sex with patients to allow for appropriate intervention and management.

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Conflicts of interest

There are no conflicts of interest.

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