

ORIGINAL RESEARCH

Education Mitigates the Relationship of Stress and Mental Disorders Among Rural Indian Women



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Abstract

BACKGROUND Common mental disorders (CMD) are a constellation of mental health conditions that include depression, anxiety, and other related nonpsychotic affective disorders. Qualitative explanatory models of mental health among reproductive-aged women in India reveal that distress is strongly associated with CMD. The relationship of perceived stress and CMD might be attenuated or exacerbated based on an individual's sociodemographic characteristics.

OBJECTIVES To screen for Common Mental Disorders (CMD) among reproductive-aged women from rural western India and explore how the relationship between perceived stress and CMD screening status varies by sociodemographic characteristics.

METHODS Cross-sectional survey of 700 women from rural Gujarat, India. CMD screening status was assessed using Self-Reported Questionnaire 20 (SRQ-20). Factors associated with CMD screening status were evaluated using multivariable logistic regression. Effect modification for the relationship of perceived stress and CMD screening status was assessed using interaction terms and interpreted in terms of predicted probabilities.

FINDINGS The analytic cohort included 663 women, with roughly 1 in 4 screening positive for CMD (157, 23.7%). Poor income, low education, food insecurity, and recurrent thoughts after traumatic events were associated with increased risk of positive CMD screen. Perceived stress was closely associated with CMD screening status. Higher education attenuated the relationship between high levels of stress and CMD screening status (82.3%, 88.8%, 32.9%; *P* value for trend: 0.03). Increasing income and age attenuated the link between moderate stress and CMD.

CONCLUSIONS Our findings suggest a high burden of possible CMD among reproductive-aged women from rural western India. Higher education might mitigate the association between elevated stress and CMD. Future efforts to improve mental health in rural India should focus on preventing CMD by enhancing rural women's self-efficacy and problem-solving capabilities to overcome challenging life events and stressors, thereby reducing the risk of CMD.

The first two authors contributed equally to this work.

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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KEY WORDS common mental disorders, epidemiology, perceived stress, rural India, SRQ-20, women's health

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INTRODUCTION

Mental illnesses are among the most common and disabling health conditions worldwide. With 7.4% of disability-adjusted life-years attributed to mental illness, they are more disabling than some physical illnesses.^{1,2} Common mental disorders (CMD) are a constellation of mental health conditions that include depression, anxiety, and other related non-psychotic affective disorders.³ The World Health Organization ranks CMD as the leading cause of disease burden in India among women in the 15- to 44-year age group.⁴

Previous studies from India have reported an association of CMD with age, sex, income, marital status, education, poverty, and deprivation.⁵⁻⁷ Additionally, the presence of chronic obstetric and gynecologic comorbidities increase the risk of CMD.⁸ Qualitative studies investigating explanatory models of mental health among women in India reveal that distress is strongly associated with CMD and common stressors include intimate partner violence, marital problems, difficulty making ends meet, and inability to care for children.^{9,10} A quantitative understanding of the relationship between stress and CMD is currently lacking.

Stress perception by an individual is a function of one's reaction to challenging life events (stressors) in the context of prior experiences, belief systems, and coping mechanisms.¹¹⁻¹³ Stressors vary in severity and duration and elicit a response (stress) that can be adaptive (eustress) or maladaptive (distress) depending on individual coping abilities.¹³ The relationship of perceived stress and CMD might be attenuated or exacerbated based on an individual's sociodemographic characteristics.^{13,14} Identification of these attributes and the mechanisms through which they could mitigate the relationship of high perceived stress and CMD holds promise for developing new strategies to promote mental health in rural India.

To our knowledge, no study has reported how sociodemographic characteristics modify the relationship between perceived stress and CMD among Indian women. Therefore, the purpose of this study

was to determine the prevalence of CMD and explore how age, marital status, education, and household income influence the association between perceived stress and CMD among women of reproductive age in rural western India, an underserved and understudied population.

METHODS

Setting and Study Design. This prospective cross-sectional cohort study enrolled women currently living in rural settings in the Anand district, Gujarat, India. Seven hundred women between the ages of 18 and 45 years were surveyed in person by trained interviewers using a questionnaire in Gujarati, the local language. Study participants were randomly recruited from 2 different settings: (1) Shri Krishna Hospital (SKH), a tertiary care center that serves the rural population; and (2) 16 surrounding villages within a 20-kilometer radius from SKH. The study received approval from the Boston University Institutional Review Board and the Human Research Ethics Committee of HM Patel Center for Medical Care and Education.

Data Collection. Participants were approached and screened for eligibility based on their age, ability to comprehend and speak Gujarati, and rural residence within the Anand district. Clinic interviews were conducted in the outpatient waiting area of a variety of clinics at SKH, including pediatrics, obstetrics and gynecology, and general medicine. Eighteen participants interviewed while visiting an inpatient clinic at SKH were excluded from this analysis because their responses could reflect acute stress experienced by the hospitalization of a relative or friend.

Researchers developed a recruitment plan for the community placed surveys by assessing village layout, number of *fariyahs* (colonies) within each village, and number of *simvistar* communities (peripheral areas) before recruitment of the participants. Subsequently, the number of participants interviewed from each *fariyah* and *simvistar* was determined so that roughly 20 women were interviewed from each village. The first female from

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