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Original Research Article

Rural-urban correlates of reproductive health with mental health in women in Odisha, India

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ABSTRACT

Background: Mental health and reproductive health are closely related. Women of reproductive age are most vulnerable. Odisha has poor maternal health indicators. Very few Indian studies comparing urban-rural differences in women's mental health.
Methods: Random sampling from respective field practice areas. GHQ-12 Mental Health screening tool used to assess health status. Pre-tested questionnaire applied to enquire about domestic and familial status, reproductive health morbidities.
Results: Proportion of reported extramarital relationships of the respondents' husband was observed to be more than twice as much in urban as compared to rural areas. Prevalence of domestic violence was found to be 43.2% in urban area as compared to 27.2% in rural areas. Significant differences were seen between urban and rural arms of the study regarding adverse pregnancy outcomes ($p<0.001$), induced abortion ($p<0.0001$), menstrual problems ($p<0.0004$) and gynaecological problems ($p=0.0031$). In these cases, rural women were observed to have significantly more combined (reproductive and mental health) morbidity than their urban counterparts.
Conclusions: Findings of the study indicate that though familial and spousal and social support parameters were more adverse in urban women, reproductive health problems and their association with poor mental health was strikingly more common in the rural populace. This may indicate an erosion of the traditional buffers against adverse mental health outcomes in the rural setting and needs further investigation.

Keywords: Mental health, Reproductive health, Urban-rural comparison, Women

INTRODUCTION

Women in developed and developing countries alike are almost twice as likely as men to experience depression.[1] Women in the reproductive age group are especially vulnerable to the occurrence of mental problems as many studies have shown that adverse reproductive health outcomes are linked to poor mental health.[1] In short, reproductive health offers a unique lens through which one can analyze the overall mental health of a woman.[2]

The close relationship of reproductive health and mental health and their overall impact on the health of women in this age bracket is significant, due to the influence this bears on the rest of the family and the children.[3]

Even though the relationship between mental health problems and reproductive functions in women has been probed by the scientific community for some time, in developing countries the intersecting determinants of reproductive events or conditions and the mental health problems faced by women are simply not detected.[1]

Odisha is one of the empowered action group (EAG) states with weak maternal health indicators and hence is a natural choice for a study on the determinants of mental health in women.[4]

There is a paucity of Indian community-based studies comparing mental health correlates of women in the reproductive age group of urban and rural areas. The current study attempts to address the said research gap and investigate the determinants of urban and rural differences in the mental health of women in the reproductive age group residing in Odisha.

METHODS

Place of study

Urban and rural field practice areas of a medical college situated in the city of Bhubaneswar, Odisha, India. Odisha is one of the smaller eastern Indian states, consisting of thirty districts. The present study was conducted in Khurda District (urban arm) and Jagatsinhpur District (rural arm). Odisha has poor maternal and child health indicators (IMR 51, MMR 222) (Sample Registration System, 2013), which made it an ideal choice to study mental health morbidity in women.

The urban health training centre (UHTC) is the nucleus of the urban field practice area of the medical college in which the study was done. This area includes the urban slums of Niladri Vihar and contiguous areas under Ward No. 9 of the Bhubaneswar Municipal Corporation (which has a Total of 60 wards). Primary health care services are provided with referral to the Pradyumna Bal Hospital attached to the medical college for more complicated cases. The slum area of Niladri Vihar is a composite one comprising six slums, viz. Harekrushna Nagar, Sitanath Bustee, Science Park, Panda Park, Rickshaw Colony and Adarsh Bustee.

The rural field is centred around the Rural Health and training Centre (RHTC), located at Kalarabank village of Jagatsinhpur District. It serves as a treatment centre for common ailments as well as a referral point to the main hospital at Bhubaneswar, for more complex diseases. Under-graduate and post-graduate medical and nursing teaching programmes are also carried out here. The RHTC serves Kalarabank and four other adjoining villages (Ainipur, Bodar, Manpur and Siuli) as its primary catchment area.

Period of study: November, 2012 to May, 2013.

Study population: 250

Inclusion criteria

Women of reproductive age (15-49 years), living for at least a year in the respective field practice areas and willing to participate in the study.

Exclusion criteria

Current pregnancy, already diagnosed mental illness or any other chronic medical illness, unwilling to participate.

Study instruments

Pre-designed, pre-tested questionnaire translated into the local languages (Odia and Hindi) for collecting socio-demographic, spousal data, general and reproductive health morbidity profile of respondents. Screening for the presence of common mental disorders was done by the general health questionnaire (GHQ-12), which is an effective mental health screening tool, validated across many cultures and languages.[5-10.]

Ethical issues

Prior permission for the study was duly taken from the institution ethics committee (IEC) of the medical college. informed consent was administered to all the study participants in their native language (choice of Odia, Hindi, Bengali or English).

Participants were interviewed at a neutral venue and in the presence of the local grass root-level health workers like anganwadi worker or auxiliary nurse midwife (ANM) after detailed explanation of this survey in order to ensure icebreaking anonymity and avoid undesirable consequences.

Subjects with significant findings on history or gynecological examination were referred to the obstetrics and gynecology (OBG) clinic of the respective field practice areas or the OBG OPD of KIMS. Counselling sessions were arranged for those with poor mental health scores.

Data entry and checking

Double data entry technique was used to transcribe the field data onto the electronic study database. Data was checked for missing values and corrected, if necessary.

Statistical analysis

Demographic and spousal variables were analysed using univariate analysis. Z- test for proportions was used to explore associations between selected spousal and reproductive health variables and the presence of common mental disorders (as detected by the screening questionnaire).

RESULTS

This comparative, cross-sectional study attempted to examine the comparative determinants of reproductive health with CMD in women of reproductive age in urban and rural Odisha. A total of 250 women, 125 in each arm were finally included in the study.

Socio-demographic characteristics of the study population: Women in both urban and rural areas were predominantly Hindu. Proportion of Muslims was 4.5 times more in urban than in rural (14.4% vs. 3.2%), but this is a region-specific finding. In both study arms, majority (40% and 35.2%, respectively) of women belonged to families of modified Prasad socio-economic class IV (lower middle) (Table 1).

Table 1: Socio-demographic characteristics of the study population.

Characteristics	Urban	Rural
	N (%)	N (%)
1. Religion		
Hinduism	102 (81.6)	121 (96.8)
Islam	18 (14.4)	4 (3.2)
Others	5 (4.0)	0 (0.0)
Total	125 (100.0)	125 (100.0)
2. Caste		
General	57 (45.6)	24 (19.2)
Scheduled caste (SC)	7 (5.6)	24 (19.2)
Scheduled tribe (ST)	57 (45.6)	48 (38.4)
Other backward castes (OBC)	4 (3.2)	29 (23.2)
Total	125 (100.0)	125 (100.0)
3. Women's paid employment		
Yes	81 (64.8)	109 (87.2)
No	44 (35.2)	16 (12.8)
Total	125 (100.0)	125 (100.0)
4. Differences in earning between married woman and spouse	**n=110***	**n=104***
Wife<Husband	84 (76.4)	99 (95.2)
Wife=Husband	6 (5.5)	0 (0.0)
Wife>Husband	20 (18.2)	5 (4.8)
Total	110 (100.0)	104 (100.0)
5. Age (years)		
<20	4 (3.2)	8 (6.4)
20-29	57 (45.6)	44 (35.2)
30-39	48 (38.4)	58
40-49	16 (2.8)	26 (20.8)
Total	125 (100.0)	125 (100.0)
6. Woman's education (highest level completed)		
Illiterate	36 (28.8)	13 (10.4)
Up to primary	52 (41.6)	30 (24.0)
Secondary & above	37 (29.6)	82 (65.6)
Total	125 (100.0)	125 (100.0)
7. Socio-economic class		
I	0 (0.0)	2 (1.6)
II	10 (8.0)	6 (4.8)
III	39 (31.2)	37 (29.6)
IV	50 (40.0)	44 (35.2)
V	26 (20.8)	36 (28.8)
Total	125 (100.0)	125 (100.0)

*Includes only married women

A lower proportion of women were engaged in some form of paid work in urban area as compared to rural (64.8% vs. 87.2%). Majority of women in both urban and rural areas were earning less than their husbands (76.4% and 95.2%, respectively).

Family and spousal characteristics (Table 2), most urban and rural families were nuclear (89.6% and 60%, respectively). More than half (53.1%) of urban husbands were educated at least till primary level, as compared to the rural area, where a similar percentage (53.9%) was seen to be educated till the secondary level. In married urban women, over 80% husbands were reported to be satisfied with the dowry received at the time of marriage, as compared to over 90% in the rural area. About three-fourths of urban women reported regular alcohol use by

their husbands as compared to 60% of rural counterparts. The proportion of reported extramarital relationships of the respondents' husband was observed to be more than twice as much in urban as compared to rural areas (12.0%vs. 5.8%). Approximately 85% urban and rural respondents said that they had good relations with their neighbors. However, over 80% urban women admitted lack of social support in their lives as compared to only 54% rural women. Rural women had comparatively greater levels of family support during their difficult times or during physical or mental illness (88% vs. 62.4%, respectively). Over half of the urban women said they enjoyed enough personal autonomy as compared to almost 70% rural women.

Table 2: Family and spousal characteristics of the study population.

Characteristics	Urban	Rural
	Number (%)	Number (%)
1. Family type		
Nuclear	112 (89.6)	76 (60.8)
Joint	10 (8.0)	13 (10.4)
3-generation	3 (2.4)	36 (28.8)
Total	125 (100.0)	125 (100.0)
2. Household size		
1-3 members	57 (45.6)	23 (18.4)
4 to 5 members	59 (47.2)	48 (38.4)
≥6 members	9 (7.2)	54 (43.2)
Total	125 (100.0)	125 (100.0)
3. Marital status		
Currently married	108 (86.4)	104 (83.2)
Currently separated or divorced	2 (1.6)	0 (0.0)
Never married	15 (12.0)	21 (16.8)
Total	125 (100.0)	125 (100.0)
3. Husband's education (highest level completed)	**n-98***	**n=102***
Illiterate	29 (29.6)	12 (11.8)
Primary	52 (53.1)	26 (25.5)
Secondary	17 (17.3)	55 (53.9)
Higher Secondary and above	0 (0.0)	9 (8.8)
Total	98 (100.0)	102 (100.0)
4. Husband's reaction to dowry received at time of marriage	**n-55#**	**n=61#**
Satisfactory	46 (83.6)	56 (91.8)
Unsatisfactory	9 (16.4)	5 (8.2)
Total	55 (100.0)	61 (100.0)
5. Husband's alcohol use	n=110^	n=104^
Regular	84 (76.4)	61 (58.7)
Non-regular	26 (23.6)	43 (41.3)
Total	110 (100.0)	104 (100.0)
6. Husband's extramarital relationships	n=108$	n=104
Yes	13 (12.0)	6 (5.8)
No	95 (88.0)	98 (94.2)
Total	108 (100.0)	104 (100.0)
7. Relations with neighbors		
Positive (Good) relationship	106 (84.8)	104 (83.2)
Neutral Relationship	18 (14.4)	17 (13.6)
Negative (Bad) relationship	1 (0.8)	4 (3.2)
Total	125 (100.0)	125 (100.0)
8. Social support		
Yes	23 (18.4)	54 (43.2)
No	102 (81.6)	71 (56.8)
Total	125 (100.0)	125 (100.0)
9. Family support		
Yes	78 (62.4)	110 (88.0)
No	47 (37.6)	15 (12.0)
Total	125 (100.0)	125 (100.0)

10. Autonomy		
Yes	66 (52.8)	86 (68.8)
No	59 (47.2)	39 (31.2)
Total	125 (100.0)	125 (100.0)
11. Domestic violence in the past 1 year		
Yes	54 (43.2)	34 (27.2)
No	71 (56.8)	31 (72.8)
Total	125 (100.0)	125 (100.0)
12. Dependent children living apart	n=110	n=104
Yes	27 (24.5)	10 (9.6)
No	83 (75.5)	94 (90.4)
Total	110 (100.0)	104 (100.0)

*Some married women could not specify their husband's education level; # Excludes the husbands who did not take dowry at the time of marriage; ^ Includes married women only; $ Some married women gave a neutral response to this question.

Table 3: Urban-rural comparison of reproductive health and morbidity profile.

	Urban	Rural	Z, p
1. Age at marriage	**n=110***	**n=104***	
Up to and including adolescence (≤19 years)	93 (84.5)	58 (55.8)	4.616, <0.0002
After adolescence (>19 years)	17 (15.5)	46 (44.2)	
2. Common gynaecological problems	n=125	n=125	
Symptoms of STI			
(I) abnormal vaginal discharge	10 (8.0)	25 (20.0)	-2.734, <0.001
(Ii) dysuria	9 (7.2)	20 (16.0)	-2.36, 0.0183
(Iii) lower abdominal pain	27 (21.6)	23 (18.4)	0.42, 0.6745
3. Menstrual problems	n=125	n=125	
(A) irregular menses	39 (31.2)	37 (29.6)	0.275, 0.7833
(B) dysmenorrhea	31 (24.8)	47 (37.6)	-2.184, 0.029
4. Previous pregnancy-related mental trauma			
Yes	47 (42.7)	33 (31.7)	1.662, 0.0965
5. Induced abortion			
Yes	6 (5.5)	14 (13.5)	-2.011, 0.0443
6. Unwanted pregnancy			
Yes	32 (29.1)	34 (32.6)	-0.57, 0.5687
7. Adverse pregnancy outcome			
Yes	9 (8.2)	27 (26.0)	-0.1778, <0.001
8. Gender disadvantage	n=125	n=125	
Present	17 (13.6)	33 (26.4)	-3.307, <0.001

*includes only married women

Table 4: Urban-Rural comparison between reproductive health co-morbidities and poor mental health outcome.

	Presence of CMD		
	Urban women (%)	**Rural women (%)**	**P value**
Gender Disadvantage	49.1	56.5	0.242
Adolescent marriage*	46.2 (110)	56.9 (104)	0.116
Adverse pregnancy outcomes**	33.3 (105)	55.6 (101)	<0.001
Induced abortion*	33.3 (110)	64.3 (104)	<0.0001
Menstrual problems	28.1	50.0	0.0004
Gynecological problems	44.1	62.8	0.0031

*includes only married women; ** includes only those who were pregnant at least once.

The prevalence of domestic violence was found to be 43.2% in urban area as compared to 27.2% in rural areas. More urban women reported their dependent children living apart from them than in rural areas (24.5% vs. 9.6%).

Urban-rural comparison of Reproductive health and morbidity profile (Table 3).

Among the urban women, almost 85% had been married in adolescence as compared to only 55% in the rural area. Regarding common gynaecological problems, the commonest complaint in urban women was lower abdominal pain (21.6%), whereas vaginal discharge was mentioned by 20% of rural women as their prime complaint.

About 30% of urban women complained of irregular menses and 38% rural women mentioned dysmenorrhea as their main menstrual problem.

A larger proportion of urban women disclosed a history of previous pregnancy-related mental trauma (42.7% vs. 31.7%). The proportion of women who had undergone an induced abortion was almost two and a half times more in rural than in urban women (13.5% vs. 5.5%) and this was echoed by the finding that there had been more unwanted pregnancies in the rural group than the urban (32.6% vs. 29.1%), as well as the observation that the proportions of adverse pregnancy outcomes were more than three times higher in rural area as compared to urban married women (26.0% vs. 8.2%).

Gender disadvantage, (which has been defined as the presence of one of the following factors reflecting restrictive reproductive choices and adverse reproductive health: unwanted pregnancy, sexually transmitted infections (STI), symptoms of STI, having a non-live birth, being widowed or divorced, or being married during adolescence, experience of verbal, physical and sexual violence by the spouse and concerns about the spouse's substance abuse habits) has been extensively mentioned in previous research work as being predictive of higher mental morbidity.[11-16] In the current study, gender disadvantage was higher in rural women compared to urban (26.4% vs. 13.6%).

Comparison between reproductive health co-morbidities and poor mental health outcome (CMDs) (Table 4). A comparison of reproductive health parameters in those suffering from any type of CMD revealed no significant difference between urban and rural women regarding gender disadvantage and proportion of adolescent marriage.

On the other hand, significant differences were seen between urban and rural arms of the study regarding adverse pregnancy outcomes ($p<0.001$), induced abortion ($p<0.0001$), menstrual problems ($p<0.0004$) and gynaecological problems ($p=0.0031$). In these cases, rural women were observed to have significantly more combined (reproductive and mental health) morbidity than their urban counterparts.

DISCUSSION

The demographic findings in the present study corroborate those of Shaver, 1998, which states that women's greater exposure to poverty throughout their lives occurs for a variety of reasons, including lower levels of education, receiving lower rates of pay, doing more part time work and 'casual' work and consequently, being less likely to be able to amass adequate savings or superannuation for a financially secure old age.[1] Regarding domestic violence, evidence from developing countries suggests that anywhere from 10% to 60% of married women of reproductive age report having ever experienced some form of DV.[17] WHO noted that the prevalence ranged from 16% in Cambodia and Mexico to a high of 42% among Kenyan women in Africa.[1] Previous studies have estimated the prevalence of DV against women in Bangladesh and rural India at 20-50%.[18,19] According to the WHO, the most recent global estimate (2013) of the prevalence of women who have experienced either IPV and/or non-partner sexual violence is 35.8%.[19]

The present study did not find any significant associations between present gynecologic morbidity and past adverse obstetric history. This was in contrast to a study conducted in Uttar Pradesh, which highlighted that there is a definite increased gynecologic morbidity among women with prior obstetric complications.[14]

Regarding gynaecological complaints, it is worth noting that in previous studies, rates of self-reported symptoms have found to be inaccurate estimates of the prevalence of gynaecological morbidity (Koenig et al).[5] Some gynecologic symptoms may in fact be an expansion of common mental health problems such as depression, given both the discordance between actual disease and gynecologic symptoms, and the high levels of depression among women with gynecologic symptoms.[20]

Psychological factors like CMDs are major risk factors for abnormal vaginal discharges. Gynecological complaints are often culturally determined bodily expressions of distress for women suffering from severe social disadvantage and psychological distress.[21,22]

Our findings differ from Stephenson et al's study, which noted that women in rural areas were less likely to report gynecologic symptoms- probably a combination of lower cognizance of their own mental health problems along with discomfiture in reporting gynecological symptoms in more conservative rural women, rather than a protective effect of rural residence.[20]

The lack of association between biological indicators of reproductive health and CMDs in a major longitudinal study done in India suggested that the social connotations of gynecological symptoms, including the possible impact on marital relationships are the possible mechanisms of association.[23]

There are multiple points of intersection between mental and reproductive health.[1] The current study attempted an urban-rural comparison of mental health in reproductive age group in Odisha. Findings of the study indicate that though familial and spousal and social support parameters were more adverse in urban women, reproductive health problems and their association with poor mental health were strikingly more common in the rural populace. This may indicate an erosion of the traditional buffers against adverse mental health outcomes in the rural setting and needs further investigation.

Since rural women are more likely to suppress adverse gynaecologic and, subsequently, poor mental health symptoms, a more effective screening mechanism needs to be devised for better preventive action.

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