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**WATER, SANITATION AND HYGIENE SERVICES BEYOND 2015:
IMPROVING ACCESS AND SUSTAINABILITY**

**Social and psychological impact of limited access to
sanitation: MHM and reproductive tract infections**

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This paper is based on study of SHARE Research Consortium and the Water Supply and Sanitation Collaborative Council (WSSCC) research partnership to investigate the specific impact of inadequate access to water, sanitation and hygiene (WASH) facilities on women and girls in India. This study is on social and psychological impact of limited access to sanitation, the link between menstrual hygiene practices and reproductive tract infections, and between WASH practices and pregnancy outcomes in Bhubhaneshwar and Rourkela (Odisha). Millions of women today are denied access or lack the facilities and means to manage the simple biological necessities of defecation and menstruation, and are often forced to adopt a range of coping strategies. The higher incidence of reproductive tract infections linked to poor menstrual hygiene management under socio-economically deprived groups is striking. Also remarkable is the lack of WASH facilities accessible by pregnant women.

Background

This partnership brings together the expertise of the SHARE Research Consortium in delivering rigorous research relating to key challenges in the sanitation sector with WSSCC 's networks and experience in linking policy and practice in developing countries for the realization of the human right to water and sanitation. While the primary aim of this collaboration is to raise important questions that have not been given sufficient attention, it also aims to catalyse changes in public policy in order to see the rights of Indian women and girls realized.

Outline of research

Odisha lags far behind much of India in access to toilet facilities and safe drinking water, with only 18% of the rural population having access to improved water and sanitation facilities, and open defecation and urination being common practices. Girls and women in India face unique social and cultural challenges in using available sanitation services for their needs. Hypothesis of study was that:

1. Limited sanitation access is a cause of Sanitation-related Psycho-social Stress (SRPS);
2. Women with poor sanitation access and hygiene behaviours are more likely to experience an adverse reproductive health outcome, such as bacterial vaginosis (BV), urinary tract infection (UTI), preterm birth (PTB), or delivery of a low birth weight infant (LBW);
3. Sanitation access, SRPS, and health risks differ with life-course stage.

The overall study goal was to describe the temporal and contextual complexities between poor water, sanitation and hygiene (WASH) conditions, behavior, and mental and reproductive health among Indian girls and women (14-45 years) during stages of the female life-course (adolescents, newly married, pregnant, other adult) in India. Study aims to:

1. Develop a conceptual model of sanitation and SRPS among specific life-course stages among women of reproductive age (adolescent, newly married women, pregnant women, and older adult women) in three specific infrastructure-restricted settings: rural, urban slum, and rural indigenous (tribal) communities in Odisha, India.

2. Explore the relationships between social, psychological, and personal stressors as they relate to sanitation and sanitation related behaviours.
3. Develop and test a quantitative scale for quantifying sanitation related psychosocial stress and its relationship to global, standardized quality of life and mental health indicators.

MHM practices vary from country to country and depend on a woman's socio-economic status, personal preferences, local traditions and cultural beliefs, and WASH access. MHM practices can be particularly unhygienic and inconvenient for girls and women in poorer settings. In India, 43% to 88% of girls wash and reuse cotton cloths, rather than using disposable pads. Sanitization of reusable material is often difficult because of poor availability of soap, clean water, and private washing and drying space. This study explores whether MHM practices are independently associated with BV or a UTI, given these contextual factors. Many studies in the United States and Europe have demonstrated that clinical history of BV infection, poverty, and high levels of stress are linked to increased risk of PTB among pregnant women. Study characterizes WASH practices and sanitation-related practices or conditions are associated with an adverse birth outcome, i.e. PTB or delivery of a LBW infant.

Approach and methodology

The approach utilizes a baseline cross-sectional survey to quantify WASH practices and reported health history among a randomly-selected subset of girls and women from each of the four life-course groups in tribal, rural, and urban areas of Odisha, and a set of overlapping sub-studies each testing focused hypotheses about pathways between sanitation access, SRPS, hygiene behaviour and health.

Social and psychological impact of limited sanitation access:

Data were collected in three phases. Phase 1 used a Grounded Theory approach to examine SRPS in women. In total, 12 focus group discussions (FGD s) and 56 in-depth interviews (IDIs) were conducted. FGD s and IDIs were equally distributed among sites (urban, rural, and indigenous / tribal communities) and life-stage group. Data collection explored topics such as general sources of stress in the household, sanitation practices, and challenges associated with sanitation related activities (i.e. defecation, urination, menstruation, post-defecation cleaning, and bathing), and associated psychological and social impacts. Interview guides were iteratively adapted in light of emerging findings during the data collection process to allow researchers to discuss emergent themes and interrelationships of SRPS factors. In the second phase, structured data collection techniques were used to explore the relationships between stressors and behaviours.

A total of 60 respondents – from all life-stage groups and research areas – completed a series of ranking and sorting exercises. Women ranked seven sanitation-related practices (defecation, urination, menstruation, carrying water, post-defecation cleaning, changing clothes for defecation, and bathing) on various criteria – including level of stress, freedom to complete the behaviour as they chose, and the amount of privacy they have when completing the behaviour. Next, women sorted 20 specific sanitation- and sanitation-related challenges identified in the qualitative phase into various categories, including the frequency and severity of the specific challenges. These data were used to inform a third round of data collection involving surveys in 360 women. Forty-five binary questions were developed that capture various aspects of SRPS.

Association between MHM practices, BV, and UTI

A case-control study was conducted on 486 women (14-45 years of age) at Capital Hospital, Bhubaneswar, and Ispat General Hospital, Rourkela. Symptomatic cases were non-pregnant women requesting treatment for one or more of the following symptoms: abnormal vaginal discharge (unusual texture and colour, or more abundant than usual), burning or itching in the genitalia, or burning or itching when urinating. Midstream urine samples were collected for urine culture. A sample with > 100,000 colony-forming units of a urinary pathogen per millilitre was considered positive. Then, trained interviewers collected information about the woman's life-stage, socio-economic status (SES), clinical symptoms and reproductive history, and MHM and WASH practices using a standardized questionnaire. Multivariable logistic regression models were built to test for association between MHM practices and symptomatic BV and UTI, as well as lab-confirmed BV and UTI, while controlling from confounding from individual and environmental factors.

Association between WASH practices and pregnancy outcomes

A prospective cohort of pregnant women (n=651) in their first trimester (12-15 weeks) in rural and tribal locations in Odisha were identified from the baseline survey and tracked over their pregnancy to document their WASH practices and pregnancy outcomes. A community health worker (CHW) visited the home to obtain consent for participation in the study and to administer a first-trimester questionnaire. The questionnaires recorded women's SES, personal hand washing and bathing practices, defecation practices, and the context of the defecation site (distance, water availability, hygiene conditions, safety, privacy, accessibility). The CHW then conducted follow-up visits and questionnaires each trimester with the participant until her pregnancy had concluded. The primary birth outcomes of interest were classified as preterm birth (<37 weeks of gestational age) and birth of a low birth weight infant (<2.5 kg), although other secondary outcomes (miscarriage and maternal mortality) were also recorded.

Key findings

- Personal safety - In urban areas, issues of safety focused on sexual assault and sexual violence while rural and tribal women were focused on the risk associated with alcohol abuse among men. Unavailability of WASH facility at home causes fear and SRPS;
- Traditional gender roles and gender-based restrictions on women's behaviours have significant impact on women's psychological well-being, particularly restrictions placed on women's activities when moving in with in-laws and restrictions on activities during pregnancy. WASH behaviours that were ranked as the "most stressful" to women (menstrual management, defecation) were also those practices in which women had the least freedom to conduct the behaviour as they see fit;
- RTI were more common in women using reusable cloth for MHM. The difference was more pronounced in those who changed pads less frequently, and washed and dried them under unhygienic conditions. Use of reusable cloths is more common in socio-economically deprived women;
- Walking long distances to defecate and carrying water is physically stressful to pregnant women;
- While most sanitation challenges are universal for women, their relative severity and frequency differed in urban, rural, and tribal areas and among young women, married women, and older adults;
- Sanitation encompasses much more than defecation, specifically within the Indian context. The act of defecation is embedded within other behaviours, including post-defecation cleaning, ritual bathing, and changing clothing; as well as menstrual management and urination;
- In response to the range of factors influencing SRPS, many women engaged in maladaptive behaviours such as withholding food or liquid, defecation and urination and in some cases limiting their use of water for personal and menstrual hygiene;
- Access to safe WASH can be a matter of life and death for a pregnant woman and her fetus. Women who lack access to a sanitation facility or use unhygienic places are more likely to experience maternal mortality and severe birth outcomes, which passes the burden of WASH disease on to their neonates. LBW or PTB neonates face higher risks for sepsis and death in the first months, and may be more susceptible to diarrhoea and malnutrition.

Recommendations

- Availability of sanitation facilities at home is necessary to save women from sexual assault, violence and alcohol abuse among men;
- More attention is needed on gender mainstreaming and incorporating women's voices in both sanitation and public policy dialogues;
- Policy that promotes the adoption and use of sanitation facilities/ latrines should be sensitive to the unique needs of women as they transition from young adults through marriage and pregnancy;
- Subsidizing the costs of sanitary napkins for economically deprived groups;
- Improving awareness of hygienic MHM practices through public and school-based education campaigns, including among boys and men;
- Investing in an adequate, well-maintained sanitation facilities with a water supply, particularly in the urban slums;
- Providing separate, private toilets with a water supply for women in the work place and educational institutions;
- Pregnant women need more urgency to use nearby, clean, and comfortable WASH facilities;

- Strategy for improving latrine access and use for women should be prepared with focus on behaviour change;
- Improve sanitation coverage must be included other hygiene behavior with defecation practices and responsive strategies are needed in order to facilitate adoption and use of sanitation technologies;
- Health care practitioners should counsel women with RTIs about safe MHM practices, in particular ensuring that communication systems extended through local community-level advocacy and outreach to the poorest women who may not seek treatment;
- Prenatal care should encompass education of women and their families about how social and SRPS-related stresses and unhygienic physical environments create risks to the mother and infant. Messages should emphasize that healthy mothers create healthy babies.

Conclusion

The findings demonstrate that the lack of sanitation has important implications for the mental, social, and reproductive health of women in rural India. There are a number of key questions that have emerged from this study. First, this study focused on women of reproductive age. The psychosocial impacts on women throughout the life-course are not limited to her period. In particular, younger girls and older women are also impacted by the lack of WASH facilities and research is needed on the impacts of sanitation across the full life-source. Second, the psychosocial impacts of sanitation access should be incorporated into robust study designs to assess the extent to which changes in sanitation availability impact psychosocial stress.

Study explored the association between WASH access and MHM practices and BV and UTI outcomes. These findings imply that poor hygiene; especially MHM practices promote infection with a broad array of organisms and may contribute to far more urogenital disease burden among women. The findings suggest that sanitation-related stress and hygiene practices both contribute to disease risks in women through complex biological, environmental, and social pathways. This could be new valid indicators for evaluating the impact of WASH and gender-related interventions in global contexts.

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Note

The SHARE research consortium and the Water Supply and Sanitation Collaborative Council (WSSCC) formed a research partnership in 2013 for four studies in India to investigate the impact of inadequate access to water, sanitation and hygiene facilities on women and girls in India. These studies are as follow, (i) A situation analysis of hygiene on maternity wards in India and Bangladesh, (ii) Women's stress and struggles for violence-free sanitation, (iii) Coping strategies to deal with inadequate WASH facilities and related health risk, and (iv) Social and psychological impact of limited access to sanitation (link of MHM and RTI). This paper presents highlights and insights only about fourth study.

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