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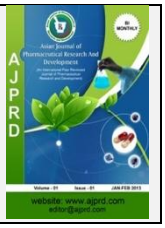

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Review Article

Link Between Menstrual Hygiene And Urinary Tract Infection

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A B S T R A C T

Menstrual health problems affect a significant portion of the global female population, yet menstrual hygiene has long been overlooked as a critical public health concern. Menstrual health and hygiene (MHH) encompass not only the absence of disease but also the physical, mental, and social well-being associated with the menstrual cycle. Adolescent girls and women, particularly in low-resource settings, face challenges in maintaining proper menstrual hygiene due to limited access to water, sanitation, and hygiene (WASH) facilities, lack of affordable absorbent materials, insufficient education, and inadequate social support. These conditions increase the risk of reproductive tract infections (RTIs) and urinary tract infections (UTIs). Across different regions, menstrual hygiene practices are shaped by socioeconomic status, cultural beliefs, and educational background. In India, the reuse of cloths without proper cleaning especially in rural areas further elevates infection risks. Poor menstrual hygiene management (MHM), including inadequate sanitation, lack of private washing areas, and improper disposal of used materials, contributes to the spread of infections such as bacterial vaginosis (BV), RTIs, and UTIs. Promoting proper menstrual hygiene practices and improving access to menstrual health resources are essential to enhancing women's overall reproductive health and reducing infection-related complications.

KEY WORDS: Menstrual hygiene, Urinary tract infection, Sanitation

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INTRODUCTION

Throughout the lives, half of the world's population will have menstrual health problems at least 40 times. still, problems with menstrual hygiene have not gotten important attention and have conceded. further people are seeing how pivotal internal health is to attaining both gender equivalency and the Sustainable Development Goals(11). Menstrual health and hygiene (MHH) is more than just the absence of illness; it includes the full range of mental, physical, and social well-being associated with the menstrual cycle Adolescent females encounter difficulties in maintaining safe, clean, and respectable menstrual experiences in school environments, according to earlier research .Among the difficulties are a lack of access to water, sanitation, and hygiene (WASH) facilities, clean and efficient absorbent materials, and information prior to the onset of menstruation; insufficient health education regarding menstruation and puberty; and a lack of social support from peers, families, and teachers for managing menstruation at home and at school. These difficulties could be linked to harmful health consequences like reproductive tract infections (RTIs) or urinary tract infections (1).

Menstrual hygiene represents a significant concern that impacts healthy adolescent girls and pre-menopausal adult women on a yearly base. Across the globe, women have cooked their own particular strategies to manage period, which differ from one country to another and are told by profitable status, individual preferences, original customs, artistic beliefs, and educational background. constantly, operation styles can be unsanitary and inconvenient, especially in economically under privileged areas. In India, it's reported that between 43 and 88 of girls conclude to wash and exercise cotton cloths rather of exercising disposable pads. still, the sanitation of applicable accoutrements may be shy, as cleaning is frequently performed without cleaner and with polluted water, while social taboos and restrictions bear drying indoors, down from sun and fresh air. Unsanitary washing practices are particularly current in pastoral regions

and among women and girls from lower socio- profitable backgrounds. likewise, menstrual hygiene operation (MHM) is likely to be told by contextual factors, similar as the vacuity of private and comfortable spaces for women to manage period- related washing. These factors are affected by access to water, hygiene, and sanitation installations within the ménage, and the relationship between these rudiments and MHM, as well as urogenital infections, has not been completely examine.

Menstrual hygiene management may heighten a woman's vulnerability to reproductive tract infections (RTI). A limited quantum of substantiation supports the notion that bacterial vaginosis (BV) may be more current among women who engage in hygienic menstrual hygiene operation (MHM) practices. Bacterial vaginosis is a poly- microbial pattern characterized by an imbalance in the resident bacterial foliage of the vagina. The normal vaginal foliage is primarily composed of hydrogen peroxide- producing lactobacilli. In cases of bacterial vaginosis, there's a drop in the population of lactobacilli, accompanied by a contemporaneous increase in a different array of bacteria, including Gardnerellavaginalis, Prevotellasp, Bacteroidessp, Peptostreptococcussp, Mycoplasma hominis, Ureaplasmaurealyticum, and Mobiluncus (2). Following figure no.1characterized the connection between menstrual hygiene and how it affects the urinary tract.

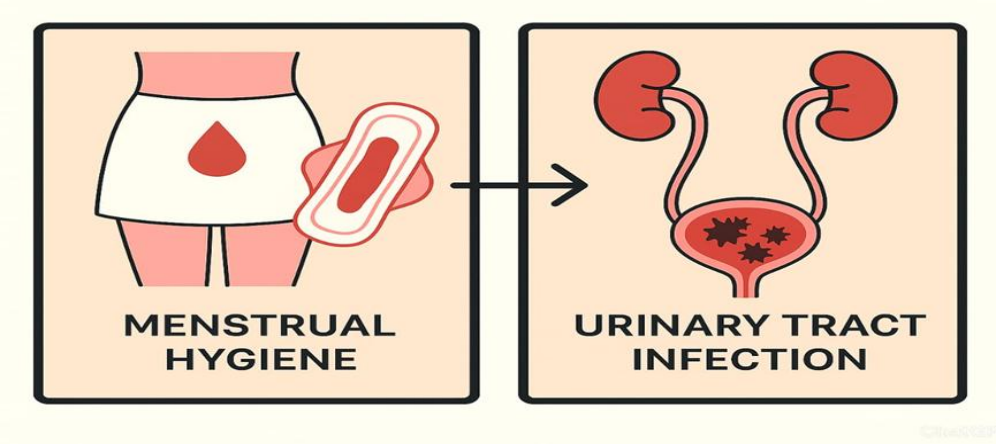

Figure 1: Menstrual Hygiene and UTI

CONCEPT OF MENSTRUAL HYGIENE

For women and girls who are of reproductive age, menstruation is a normal monthly event. An essential stage for teenage girls, menarche, or the start of menstruation, marks their transition into puberty and femininity and starts at some point during adolescence. In order for teenage girls and women to actively engage in daily activities after reaching menarche, proper management of their menstrual health and cleanliness is necessary. The "use of clean menstrual management material to absorb or collect blood that can be changed in privacy as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials" are the definitions of adequate menstrual hygiene management. Menstrual health and hygiene management (MHHM)together with the broader idea of menstrual health and cleanliness is characterized as the WHO/UNICEF Joint Monitoring Programmed (2012) states that there are "broader systematic factors that link menstruation to health, well-being, gender equality, education, equity, empowerment, and rights." appropriate MHHM must integrate the two ideas since the definition of appropriate menstrual hygiene management leaves out the systematic factors that result in human rights abuses connected to menstruation. Although not found in the literature, the authors suggest applying a definition of sufficient MHHM that takes into account both the access to and utilization of sanitary menstruation supplies, facilities for disposing of the supplies, and soap and water for body washing, in addition to living without societal conventions and taboos that restrict knowledge and empowerment (25). Preface Menstrual hygiene operation (MHM) has been a significant global public health issue. Poor MHM not only accounts for negative health and psychosocial consequences but also social and artistic consequences that negatively affect the quality of life in women of reproductive age group. Grounded on the WHO/ UNICEF Joint Monitoring Programmed for Water Supply, Sanitation, and Hygiene, women and adolescent girls should use an aseptic menstrual operation product that may be replaced in private. They should be handed with cleaner and water for raining and installations for the disposal of habituated/ soiled menstrual operation products. At particular position, mindfulness and integrity are demanded — having the rudimentary data regarding menstrual cycle and how to deal with it with quality, without pain or fear. In 2021, Rossouw and Ross came up with the term" period- poverty" that evokes absence of access to important- demanded hygiene installations during period and proper installations to use them, including simple sanitation and menstrual information(3). Inadequate MHM has social and cultural effects that diminish the quality of life for women of reproductive age, while also being associated with adverse health and psychosocial results. The Joint Monitoring Programmed for Water Supply, Sanitation, and Hygiene by WHO/UNICEF advises that adolescent girls and women utilize a private and hygienic menstrual management product. For bathing, they need access to water and soap, along with places to dispose of soiled or used menstrual hygiene products (8).

The commercial sector had a crucial role in promoting awareness about menstrual hygiene management. Proctor & Gamble (P&G), one of the top producers of sanitary products worldwide in 2005, with operations in sub-Saharan Africa and other LMICs, joined forces with the Forum of African

Women Educationalists to advocate for the elimination of the value-added tax on the importation of sanitary products. In order to achieve their objectives of growing their markets, establishing their brand, and upholding a social responsibility ethic that included a dedication to teaching girls about their bodies, Proctor & Gamble carried out a variety of menstruation management-related activities for girls (14).

INTRODUCTION TO URINARY TRACT INFECTION(UTI)

The primary function of the urinary system, which consists of the feathers, ureters, bladder, and urethra, is to filter blood by removing waste products and spare water. The urinary system is primarily responsible for the jilting of metabolic waste from the bloodstream. also, it plays a vital part in homogenizing blood ion and solute situations, as well as regulating blood pressure and volume. In healthy individualities, urine is either sterile or contains truly multitudinous pathogenic microorganisms. Urinary tract infections (UTIs) rank among the most common contagious conditions encyclopedically, affecting 150 million people each time. These infections can involve the feathers (pyelonephritis), bladder (cystitis), or urethra (urethritis). (4)

Types of UTI

Complicated UTI

A complicated urinary tract infection (UTI) is an infection with an advanced trouble of failure of remedy. Accurate identification is important since analogous infections generally bear dragged courses of remedy, other antibiotics, and sometimes further examinations to make sure that they are being optimally treated. An uncomplicated UTI, or cystitis, is a UTI caused by the applicable bacteria in a setting with neither treatment failure nor adverse issues. utmost generally, this infection occurs in an expectant womanish case, without fever, and with complete immunity. Pyuria and/ or characteristic bacteriuria is not a UTI and may possibly be treated, but not inevitably. For case, an incidental positive urinalysis in a womanish case who does not have symptoms and is not febrile, and who is not pregnant, is not a UTI. A complicated UTI is any UTI not falling within the donation of a straightforward UTI. Consequently, UTIs in immune compromised cases, males, pregnant women, and those with combined complications, monuments, sepsis, obstructive urine, catheter, or order infection are classified as being complicated infections.

Causes

The Causes utmost UTIs are caused by bacteria from the rectal and perineal regions colonizing the urogenital tract. Klebsiella, Pseudomonas, Escherichia coli, Enterococcus, and other Enterococcus or Staphylococcus species are among the most current organisms. The most common of them is E. Coli, which is followed by Klebsiella (9).

Uncomplicated UTI

Lower tract UTIs, frequently known as cystitis, are another term for simple UTIs. A UTI is

not always present in a person who has bacteriuria or pyuria but no Symptoms. Urination pain, urgency, lower abdominal discomfort, and frequent urination are typical signs of a urinary tract infection. Although UTIs are fairly common in women, circumcised men rarely get them. UTIs in virile circumcised individualities are generally regarded as complex. Although multitudinous simple UTIs resolve on their own without medical intervention, cases constantly seek treatment to palliate their symptoms. Treating the infection aims to help it from spreading to the feathers or getting a more dangerous condition like pyelonephritis, which can damage sensitive nephron structures and ultimately affect in issues like high blood pressure. A urinalysis and the case's clinical history are used to diagnose a UTI, and a urine culture is used for substantiation. Proper urine sample collection is essential for precise testing and culture.

Causes

Women’s trouble of UTIs is increased by pathogenic bacteria that go from the rectum and perineum to the periurethral region. In addition, women's urethras are shorter than men's, making them more susceptible. rarely do blood- borne origins produce simple UTIs. Klebsiella is the alternate most common cause of UTIs after Escherichia coli. Enterobacter, Enterococcus, and Proteus are other noteworthy microbes. Urinary catheter use and other urethral manipulation are major trouble factors for UTIs. UTIs following order transplants are also frequent, and vesicoureteral affluence and immunosuppressive specifics are two of the main causes. The use of antibiotics, which might affect in the emergence of resistant bacterial strains, and diabetes mellitus are fresh trouble factors (5)

CONNECTION BETWEEN MENSTRUAL HYGIENE (MH) AND URINARY TRACT INFECTION (UTI)

The health of women is greatly impacted by their menstrual hygiene habits. It increases their susceptibility to reproductive and kidney infections (RTI). There is a significant correlation between RTI, menstrual hygiene practices, and socioeconomic level. Renal infections and RTIs afflict millions of women today, and they frequently have an impact on the unborn offspring of pregnant women.

Women are less likely to get RTIs, UTIs, and their after effects if they are more informed about safe menstrual hygiene habits. Millions of women can experience less agony and safer behaviours if menstruation is made more widely known from an early age. Menstrual hygiene management (MHM) includes having access to facilities for disposing of used items, seclusion for changing materials, and products that absorb or collect menstrual blood. The way that women and teenage girls manage their periods is known as MHM. To properly and hygienically manage menstruation, a good MHM needs a foundational understanding and awareness. Maintaining proper hygiene throughout the period, having access to facilities for washing or appropriately disposing of old materials, and utilizing clean materials to absorb or collect menstrual blood are all examples of this. MHM includes tackling societal taboos and attitudes surrounding menstruation in addition to managing it. Urinary tract infections (UTIs) can damage the kidneys, ureters, bladder, and urethra, among other parts of the urinary system. The bladder and urethra in the lower urinary system are the sites of the majority of infections. A UTI is more likely to occur in women than in males. Bladder infections can cause discomfort and annoyance. If a UTI spreads to the kidneys,

however, there may be major problems. Fever, chills, fatigue, pain or pressure in the lower abdomen or back, cloudy and foul-smelling urine that occasionally contains blood, and a burning feeling when urinating are all common signs of urinary tract infections (UTIs) (6).

The fact that women with better incomes and educated care takers were more likely to have appropriate MHM suggests the importance of knowledge and resource access. Numerous Indian research has reported similar results, indicating that a mother's adherence to sanitary practices during her period is significantly predicted by her wealth and educational attainment. The experience of stigma was found to be weakly correlated with higher appropriate MHM. One argument is that women who are criticized might change how they behave, which could lead to better hygienic practices (7).According to research, the prevalence of UTIs in Indian women ranges from 3.14% to 19.87%, highlighting the condition's substantial impact. An increased risk of some conditions has been linked to factors like parity, history of abortion, sexual behaviour, water intake, and urine habits leads to UTIs. A thorough investigation is urgently needed to comprehend the factors impacting the prevalence of UTIs among Indian women, given the complexity and multidimensional character of UTIs, particularly in rural areas (20). RTIs can cause issues like infertility and unfavourable pregnancy outcomes, therefore their effects go beyond the actual sickness. Therefore, protecting women's health and general well-being requires treating both RTIs and UTIs. The problems caused by UTIs and RTIs are made worse in refugee camps with inadequate living conditions and limited access to medical care. In these environments, displaced persons face challenges such as psychological discomfort, unstable economic conditions, and impaired practices. Effective hygiene management is essential for women's health in refugee camps, and menstrual hygiene management (MHM) presents several difficult issues in these settings. Due to the lack of access to menstrual products, many women engage in unsanitary behaviours. For example, a study on Rohingya adolescent girls in a Bangladeshi refugee camp found that over 50% of them wore clothing during their periods, with 10.89% of them using only pants without absorbents. 8. These behaviours, like reusing items, significantly raise the risk of infections, such as respiratory tract infections (RTIs) and urinary tract infections (UTIs) (21).

The improper mensural hygiene can increase the risk of urinary tract infection that given in figure no.2.

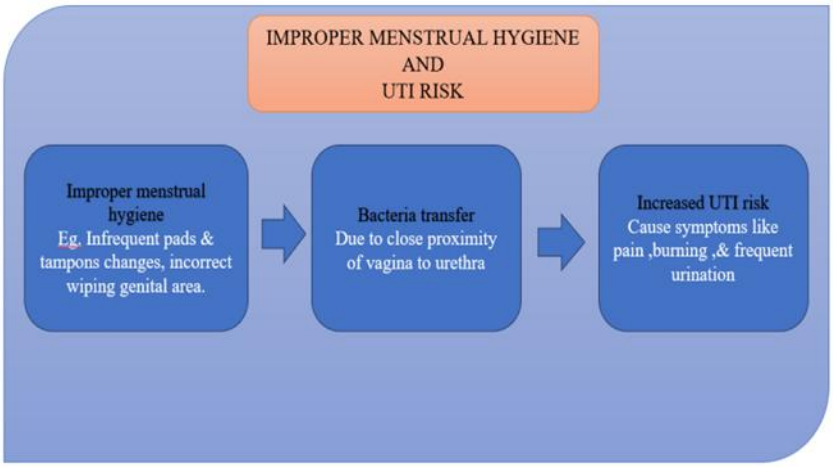

Figure 2: Improper MH and UTI Risk

HOW MENSTRUAL HYGIENE AFFECTS THE UTI RISK

- **pH of the Vagina**

  Vaginal pH is normally low (acidic), ranging from 4 to 5. The presence of lactobacilli bacteria, which release hydrogen peroxide and lactic acid, as well as cells in the vaginal epithelium that release lactic acid in response to elevated estrogen levels, maintain the acidic ph. The vagina becomes much less acidic as uterine tissue and blood (pH 7.35–7.45) pass through it. The higher pH makes it easier for potentially harmful bacteria to proliferate, which can then spread from the vagina to the urinary system and either cause a UTI or make a person more susceptible to getting one. The acidic atmosphere typically keeps these bacteria in control. The vaginal microbiome can also undergo cyclical alterations as a result of hormonal changes.

- **An Increase In Fluids**

  During menstruation, the area's increased fluid content may further raise the risk of UTI. Bacteria can grow and spread more easily in environments with higher moisture content. Absorbent materials used in feminine hygiene products are a breeding ground for bacteria. Menstruation was found to have a substantial link with the development of UTIs in one study that examined hygiene/behavior and UTI risk. They found that the individuals in the group who changed their menstrual absorbent less frequently experienced noticeably more UTIs. The germs may have more time to proliferate and make their way to the urinary tract.

- **Menstrual Cycles And Urinary Microbiota**

  Only Recently has the urine microbiome been recognized as another natural revision that occurs during period. The intricate community of microorganisms that inhabit the

urine tract is known as the urinary microbiome. Although it's generally known that the vaginal microbiome changes over the menstrual cycle, the urinary microbiome also changes, and this is presumably a significant factor in the prevalence of UTIs. Experimenters from UCLA, UC San Diego, and Loyola University Chicago showed in March 2020 that the urine microbiota varies after vaginal coitus and period. During period, the experimenters did discover lesser than usual attention of common skin bacteria in the urine microbiome. The use of womanlike hygiene products during period may be one reason, as they may bring dangerous origins into the area from the girding skin.

- **Harmonal Changes**

  Changes in hormones might also be involved. We know that by affecting the vaginal flora, decreased estrogen production can indirectly raise the incidence of UTIs. That can also be occurring during the menstrual cycle. The uterine lining sheds as a result of a decrease in estrogen production before menstruation. As previously stated, the vaginal microbiome may become momentarily more susceptible as a result of this estrogen decrease (15).

- **Cleaning Habits And The Risk Of Urogenital Infections**

  According to a single study, symptoms of urogenital infections were linked to bathing or vaginal cleaning with water during menstruation as opposed to water and soap. In a similar vein, Baker et al. demonstrated that hand washing with soap after defecating, bathing with soap every day, and washing hands with mud or soil after defecating were linked to an increased risk of recurrent tract infections in comparison to washing with water alone or not washing hands at all. The corresponding odds ratios were 6.55 (95% CI = 3.60, 11.94), 10.27 (95% CI = 5.53, 19.08), and 6.02 (95% CI = 3.07, 11.77) (23).

Menstrual Hygiene Practice Quantitative Distribution

Probabilities of women who use aseptic, unsanitary, and both approaches grounded on background variables. In terms of connubial status, women who had no way married were more likely to use the aseptic approach (53). Among widowed, disassociated, or separated women, the use of both styles (29.2) and unsanitary styles (34.8) was largely current. Compared to their pastoral counterparts (42.2 percent), civic resides (68.1 percent) were more likely to use aseptic practices.

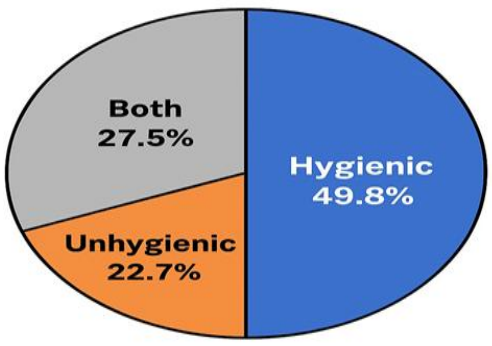

Figure 3: Percentage Distribution of Menstrual Hygiene Practice in India

Among all the repliers, ST women had the smallest chance of aseptic procedures used (38.6), compared to all other estate groups. likewise, it was observed that 69.2 percent of women with advanced education situations use aseptic practices, whereas 18.7 percent of women with no formal education do so.

In a similar vein, as wealth quintiles increased, the prevalence of hygienic practices increased and the prevalence of unsanitary practices decreased. While women who conducted open defecation were more likely to select unclean activities (40 percent), women in households with improved toilet facilities were more likely to practice hygienic behaviours (54.7 percent). Additionally, women who had substantial exposure to the media (65.3 percent) applied sanitary practices at a significantly higher rate than women who had no exposure to the media (43.7 percent) (12)

BARRIERS TO MENSTRUAL HYGIENE

1. Structural Barriers

Insufficient menstrual hygiene infrastructure, including a lack of access to clean water and proper sanitation facilities.Difficulty obtaining affordable menstrual products, especially in rural or economically disadvantaged areas.Financial hardships, worsened by widespread poverty and inequality. Disruptions caused by displacement and humanitarian emergencies, which hinder access to essential menstrual health services. Accessibility obstacles for people living with disabilities.

2. Cultural Barriers

Social stigma and taboos around menstruation, which foster feelings of embarrassment and secrecy. Cultural and religious beliefs that discriminate against women during menstruation.Gender-based discrimination that restricts women's autonomy and decision-making capacity.

3. Systemic Barriers

Lack of adequate education regarding menstruation and reproductive health, leaving many young people unprepared for menarche.Insufficient training and awareness among healthcare professionals about menstrual health issues.Gaps in policies and laws, including the absence of comprehensive frameworks that safeguard menstrual health rights (17).

4. Insufficient Housing

Observations from the field and reports compiled by the humanitarian relief organization indicated that repeated disasters resulted in large quantities of debris covering both homes and farmland. This left no available land for reconstructing houses or setting up shelters and tents in safer areas with access to water and sanitation facilities. During field visits, the researcher noted that many families were forced to live in a single tent or shelter at the top of mountains or hills, with space far too small for the number of family members. These shelters were overcrowded, not resistant to harsh weather conditions, lacked bathing areas and water supplies, and offered no private space for women to wash or dry menstrual materials. In several villages, women were required to

descend to rivers to wash their menstrual cloths and would dry them by hiding them inside plastic bags to maintain privacy (18).

5. Consequences Of Inadequate Menstrual Health Management

The obstacles in menstrual health management have profound effects that include:

6. Health-Related Consequences

A higher likelihood of reproductive tract infections (RTIs), urinary tract infections (UTIs), and other hygiene-related diseases.Greater vulnerability to HIV and sexually transmitted infections (STIs) due to poor menstrual hygiene. Risks of secondary infertility and complications during pregnancy linked to untreated infections. Increased chances of medication-related problems.

7. Educational And Social Consequences

Absenteeism from school and poor academic outcomes due to insufficient menstrual health resources and facilities.Increased exposure to gender-based violence such as harassment and abuse, particularly in environments without proper sanitation like schools and public areas.Reinforcement of stigma and social exclusion, which negatively affects mental health and self-confidence.

8. Economic Consequences

Decreased workforce participation and productivity among women owing to a lack of workplace support for menstruation. Financial strain from the cost of menstrual products, especially for families with limited income (17).

9. Lack Of Waste Disposal Systems

The absence of proper waste disposal methods in disaster-relief camps further worsened menstrual hygiene for displaced women in rural Pakistan. In interviews, women explained that frequent disasters and forced relocations made it extremely difficult to wash and dry used menstrual materials. Without any waste management services in these camps, many women resorted to secretly burying or burning their used menstrual cloths on the ground after repeatedly using them for several days (18).

Disease Associated With Improper Menstrual Hygiene

Disease linked to improper use of sanitary pads Menstruation hygiene practices are a serious issue that can have a negative impact on an adolescent's health if they are neglected. Poor genital hygiene can cause reproductive tract infections (RTI), toxic shock syndrome, and other vaginal diseases. Most girls are unprepared and unaware of menarche because they are misinformed about menstruation. If menstruation hygiene is not handled or practiced safely, it can lead to an unhealthy life with consequences such as distress, genitourinary tract infection, reproductive tract infection, cervical cancer, guiltiness, odour problem, school dropout, etc.

Menstrual Toxic Shock Syndrome

Teenage women who used tampons had a higher risk of mTTS than those who used period pads. Alongside the tampon's improved absorbency comes an increased risk of mTTS. Persuasive epidemiology in the market led to the elimination or removal of penetrable tampons. Using the tampon for an extended length of time increases the risk of mTTS. The symptoms of mTTS, which include dizziness upon standing, vomiting and diarrhoea, and an abrupt onset of fever, are seen close to or after menstruation and are comparable to those of early flu.

Ovarian Polycystic Syndrome

Approximately 15% of women worldwide suffer from polycystic ovarian syndrome, or PCOS. It is a diverse endocrine condition. Adverse androgen activity or secretion, along with aberrant insulin activity in the majority of women, constitute a severe endocrine disruption. Numerous health issues, such as hirsutism, irregular menstruation, acne, metabolic syndrome, obesity, and infertility, are brought on by PCOS. Women who suffer from this condition may be at risk for cardiovascular disease and type 2 diabetes. Chronic anovulation and hyperandrogenism are the hallmarks of PCOS, a disorder whose source is uncertain that may improve or stay the same following removal of polycystic ovaries.

Reproductive Tract Infections

RTI's are widespread and a serious public health issue. Trichomonasvaginalis (TV), bacterial vaginosis (BV), and Volvo-vaginal candidiasis (VVC) are the most prevalent infections of the reproductive system. BV is the most prevalent. Variability in the vaginal microbiome, including an increase in facultative anaerobic bacteria and a decrease in lactobacillus colonisation, are characteristics of BV. The most problematic feature of BV for women of

reproductive age is the absence of vaginal inflammation, which can lead to risky pregnancy outcomes such as the development of pelvic inflammatory disease, preterm birth, and the acquisition of sexually transmitted infections. 75% of teenage girls will get VVC at some point in their lives, and candida infection is another prevalent RTI. Since VVC has no symptoms, it is referred to as colonisation. (19).

SANITATION PRACTICE TO PREVENT UTI

1. Building And Remodelling Toilets

To make restrooms at workplaces, public spaces, and seminaries aseptic, private, and completely furnished with water and disposal installations, governments and institutions are spending plutocrat structure and revamping these installations. These programs help produce staid and safe spaces for women and girls to manage their ages.

2. Mobile Toilet Units

These give temporary results for managing menstrual hygiene in areas without endless sanitation installations. They're particularly helpful in exigency situations or at gatherings where restrooms are limited (10).

3. Education Intervention

It is anticipated that girls who are aware of their periods will have better mental health and experience fewer negative psychosocial consequences, such distress. Small-scale training programs offered to school-age girls and, to

a lesser extent, female university students outside of official educational systems were among the interventions tested in the current evaluation to improve MH knowledge. MH constructs as barriers to measurement and study comparability include MH knowledge, attitudes, and behaviors (11).

4. Women's Empowerment

The development of women's self-worth, their autonomy in making decisions, and their right to impact societal change for both themselves and others are all aspects of women's empowerment. This study includes the following women empowerment indicators: respondents' current employment status (currently employed, not employed); respondents' ownership of land for housing or other purposes (yes; no); dichotomized responses of women's exposure to mass media (yes; no); respondents' use of mobile phones (yes; no); respondents' use of the internet (yes, no); and respondents' access to a bank account for financial transactions (yes, no)(22).

5. Menstrual Hygiene Practice

Reusable clothing was found to be unrelated to Trichomonasvaginalis (TV) infection, weakly related to bacterial vaginosis (BV) infection, and substantially connected with Candida infection. An increased risk of BV was linked to changing the absorbent somewhere other than a lavatory. While not for TV, women who cleansed themselves less frequently during their periods were more likely to get a BV and Candida infection. Women who changed their absorbent material more frequently (twice or more) than those who changed it once a day showed lower infection rates in the BV-confirmed group (24).

6. Washing

Regular, mild bathing of the vagina's exterior is necessary to keep it clean. Every day, wash the area with warm water. Steer clear of scented gels and soaps. The odors may cause irritation to the surrounding region and serve only as a cover for an underlying problem that is causing the stench. Douching may make vaginal odor and other problems worse rather than better. Wipe the toilet from front to back after using it. Better still, before patting dry, rinse with warm water to get rid of any unwanted microbes (26).

7. Vaginal Hygiene

Replace tampons, pads, and liners at least four to five times every day. During this time, it could also be helpful to wash or wipe the region frequently. Additionally, stay away from the scented versions of these products. Consuming yoghurt may help treat yeast infections. Lactobacillus acidophilus, which is present in this product, is in charge of suppressing yeast growth and creating the acidic environment that the vagina requires. However, avoid putting yoghurt in the vagina. Yogurt's sugar content can further promote the growth of the yeast, worsening the illness. Furthermore, probiotics can be taken everyday and are a great source of lactobacillus (26).

Figure 4: Element Important For MHM

HEALTHY HABITS DURING MENSTRUATION

Many menstruation goods, including sanitary pads, tampons, cups, discs and period pants, can be used to absorb or collect blood during your period. In addition to the directions included with each product, keep the following in mind when using menstruation products:

1. Hand Washing

Wash your hands after using the restroom and before using any period products.

2. Disposable Menstruation Products

Disposable period particulars should be disposed of meetly by belting them in restroom paper, towel, or another material before throwing them in the scrap. Using period products in the restroom is not advised.

3. Sanitary Pads

Change your aseptic pads every many hours, anyhow of how little the inflow is. However, you should change them more regularly, if you have a heavy period.

4. Tampon

Replace your tampons every 4 to 8 hours. You should never use a single tampon for longer than eight hours at a time. The tampon with the least absorbency should be used. If a tampon can be used for more than eight hours without changing, its absorbency might be too high.

5. Menstrual Cups

After each use, wash the cups. When your period is over, rinse your menstrual cups well and then immerse them in hot water for one to two minutes to sanitize them.

6. Period Underwear

The maturity of applicable period undergarments is machine washable. Observe the product's cleaning recommendations (13).

OTHER HYGIENIC PRACTICE

You can maintain your health and comfort throughout your period by following these hygiene tips

1. Wear light, permeable clothes, similar as cotton pants.
2. Clothing that's too tight can trap humidity and heat, which encourages the growth of origins.
3. Period products should be changed frequently. Bacteria and fungi thrive when there is trapped humidity.
4. Dragged operation of a pad or period pants can beget an infection or greenish ness. Keep
5. the genital area clean.
6. Incentive or bacterial vaginosis are two vaginal infections that can affect from washing your vagina or using chemicals to clean it out, which can alter its natural pH balance.
7. Use pads, unscented restroom paper, or tampons. Using scented personal care products might upset your skin's natural pH balance and cause irritation.
8. Drink plenitude of water. This will help clear your urinary tract and help infections like incentive infections.
9. Wash your bottom and the vulva, which is the surface of your vagina, every day.
10. When using the restroom, wipe from the front of your body towards the reverse, not the other way around. Just use water to wash your vulva. One organ that can clean itself is the vagina.
11. Observe your menstrual cycle. One important indicator of your general health is your menstrual cycle. Thyroid problems, diabetes, or coeliac complaint may be indicated by irregular ages. A phone app designed especially for recording ages or a timetable can be used.
12. Get a monthly physical from a croaker. A periodic heartiness scan is a comprehensive examination that includes a pap smear, pelvic test, and bone test. These tests are essential for conserving excellent reproductive health because they can identify early signs of cancer or other health issues (13)

CASE STUDY

Menstruation and Menstrual Hygiene Management in a Civic Slum of Indonesia

1. Background:

An essential element of women's health and good is menstrual hygiene operation, or MHM. Women's capacity to effectively manage their ages is compromised in low- and middle- income countries by issues like a deficit of affordable menstrual products, a lack of information, and shy water, sanitation, and hygiene (marshland) infrastructure. In Indonesia, utmost studies concentrate on adolescent girls, with little attention to adult women. This study addresses that gap by examining menstrual status and MHM practices among adult women in a civic slum of Bandung, West Java, Indonesia.

2. Objects:

The study aimed to-

- Examine the menstrual status of adult women in the study point.
- Identify being problems related to MHM, including styles of menstrual blood collection and disposal of habituated products.

3. Methodology:

Study point KiaraCondong, Bandung, West Java, Indonesia – a densely peopled civic slum with implicit marshland challenges. Actors 32 adult women aged 19 – 52 times. Data Collection Semi-structured questionnaires (19 menstrual-affiliated questions demographic information) and in- person interviews conducted in the original language (August 2019). Ethical Considerations Actors were informed of the study purpose and handed spoken concurrence.

4. Crucial Findings:

a) Participant Profile:

Age groups 34 in their 20s, 44 in their 30s, remainder in 40s – 50s. Education 65.6 had high academy education, 12.5 had university education. Employment 68.8 were housewives, 31.2 employed. Income 50 earned 2.5 – 5 million IDR/ month; 9.4 earned lower than 1 million IDR. Household Majority had 4 – 5 members. All actors had private toilets.

b) Menstrual Status:

Reported normal cycles, 18.8 reported irregular cycles. Bleeding duration 71.9 endured 5 – 6 days; 18.8 reported> 6 days. Many actors used oral contraceptives to regulate period.

c) Menstrual Hygiene Practices:

Absorbent Accoutrements 100 used disposable aseptic towels; 9.4 also used panty liners. No one used cloths. frequence of Change Only 6.2 changed> 4 times/ day; maturity (75) changed 3 – 4 times/ day, while 18.8 changed only 1 – 2 times/ day. This is below the recommended 5 – 6 changes/ day, raising pitfalls of infections similar as bacterial vaginosis and UTIs. Availability utmost women bought towels from original shops or convenience stores. Some reported pads as precious, forcing reduced frequence of change.

d) Disposal Practices:

Common way washing used towels to remove blood → squeezing redundant water → wrapping → disposing in trash caddy → handwashing. 97 believed trash lockers were demanded in toilets, but one- third demanded them at home. Some women removed corridor of pads and flushed them into toilets, risking sewage blockages and environmental pollution. Washing towels before disposal was a culturally tutored practice, linked to comprehensions of menstrual blood as "impure" and enterprises for sanitation workers.

e) Challenges linked:

Cost & Access 18.8 set up aseptic products precious; some could slightly go them. Disposal Issues Lack of trash lockers in toilets; artistic misconceptions about pad disposal. WASH installations small restroom spaces, lack of showers, and disposal-related clogging problems.

1. Discussion:

The findings reveal that while aseptic pads are extensively available and used, MHM practices in this community remain shy due to fiscal constraints, low frequence of pad changes, and indecorous disposal styles. Cultural morals (viewing menstrual blood as dirty) explosively told practices like washing towels before disposal. Lack of applicable marshland structure, particularly disposal installations, further compounded challenges.

2. Conclusion:

This case study highlights that women in Bandung's civic slum face significant walls to safe MHM. Although menstrual cycles were generally normal, the use and disposal of aseptic products posed health and environmental pitfalls. Educational interventions, bettered access to affordable aseptic products, and provision of proper disposal installations (trash lockers, incinerators) are urgently demanded to promote safer and further sustainable MHM practices.

3. Recommendations:

- Health Education Programs Raise mindfulness about safe pad operation and disposal.
- Affordable Sanitary Products Introduce subventions or community- grounded distribution.
- WASH Advancements Install trash lockers in ménage/ public toilets and ameliorate sanitation systems.
- Policy Integration Government and NGOs should integrate MHM into public health and environmental programs (16).

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CONCLUSION

The review highlights that improper menstrual hygiene practices significantly increase the risk of urinary tract infections (UTIs) and reproductive tract infections (RTIs) among women of reproductive age. Poor hygiene practices, such as infrequent changing of absorbent materials, lack of clean water, and absence of proper waste disposal systems, contribute to infection spread. Education, awareness, and accessibility to affordable menstrual products are critical to improving menstrual health. The review also emphasizes that women from rural and low-income communities face greater challenges due to limited infrastructure and social stigma. Strengthening menstrual hygiene management (MHM) through education, sanitation improvements, and empowerment initiatives can substantially reduce the prevalence of UTIs and RTIs. Furthermore, integrating menstrual health into public health and education systems is essential to achieving better health outcomes and promoting gender equality.

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