

WOMEN'S KNOWLEDGE AND SELF-CARE PRACTICES IN THE PREVENTION OF REPRODUCTIVE TRACT INFECTIONS (RTIS): IMPLICATIONS FOR REPRODUCTIVE HEALTH AND WELL-BEING IN NIGERIA

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Abstract

Reproductive tract infections (RTIs) have continued to present a significant public health problem, especially in developing countries, due to their impact on reproductive and general wellbeing of women. This literature review highlights the importance of women's knowledge about RTIs and self-preventive measures against them, specifically Chlamydia, Gonorrhea, Bacterial Vaginosis, and Candidiasis. The theoretical framework underpinning this study was Pender's Health Promotion Model (1982). The model states that health promotion is influenced by an individual's perception, knowledge, and beliefs towards healthy lifestyle. A narrative literature review design was used where selected peer-reviewed studies and articles on RTIs were discussed. It was established that women were generally aware about RTIs, but they lacked adequate knowledge about symptoms, causes, preventive and treatment measures, especially rural women. Further, the review pointed out that the self-care behaviours of women have a significant bearing on the prevention and incidence of RTIs. Healthy behaviours, which include proper menstrual hygiene, hygienic vaginal care, hydration, and healthy eating habits, are associated with a low incidence of RTIs while unhealthy behaviours, such as vaginal douching, using unhygienic materials during menstruation, have been linked to high vulnerability to RTIs. Further, some of the factors found to act as barriers to healthcare seeking behaviour of women included poverty, shame and embarrassment, lack of information about RTIs, lack of access to healthcare facilities, and hostility from healthcare workers. It was recommended that health education specialists, community health workers, and media groups should conduct reproductive health education programmes within schools, markets, churches, and other places within the community, in order to create awareness among women regarding RTI prevention and treatment

Keywords: Reproductive tract infections, Women's knowledge, Self-care practices, Reproductive health, Healthcare-seeking behaviour

Introduction

Reproductive health (RH) is fundamental to the general health and well-being of the human body and the lifecycle. It has a direct impact on the health and survival of individuals, families and communities. Reproductive Tract Infections (RTIs) are a diverse group of infections that affect the reproductive system that can be endogenous (arising from within the body), sexually transmitted, or iatrogenic (introduced by medical procedures). More than a million women and babies die every year as a result of complications related to RTIs. RTIs had become a silent epidemic that deeply affected the lives of women. Worldwide, there are three types of RTIs which have a major impact on damaging women's health and causes their death, STIs (sexually transmitted infections) for example gonorrhea, chlamydia, syphilis, trichomonas, and HIV infections), Endogenous infection (overgrowth of certain endogenous organism in reproductive tract such as candidiasis and bacterial vaginosis) and procedural infections (resulting from procedures like menstrual regulation, abortion, IUD insertion) (Mahant, Verma & Jaiswal, 2024). This estimates that there are approximately 340 million new cases of treatable STIs each year. This number does not include human immunodeficiency virus (HIV) or other viral STIs such as hepatitis B, orogenital herpes and orogenital warts, which are not curable, among curable STIs, the most prevalent in HIV-positive populations are gonorrhoea, syphilis, chlamydia and trichomoniasis. In conjunction, these infections represent a significant health burden and enhance susceptibility to HIV transmission (WHO/UNFPA 2006 in Balakrishnan et al., 2024).

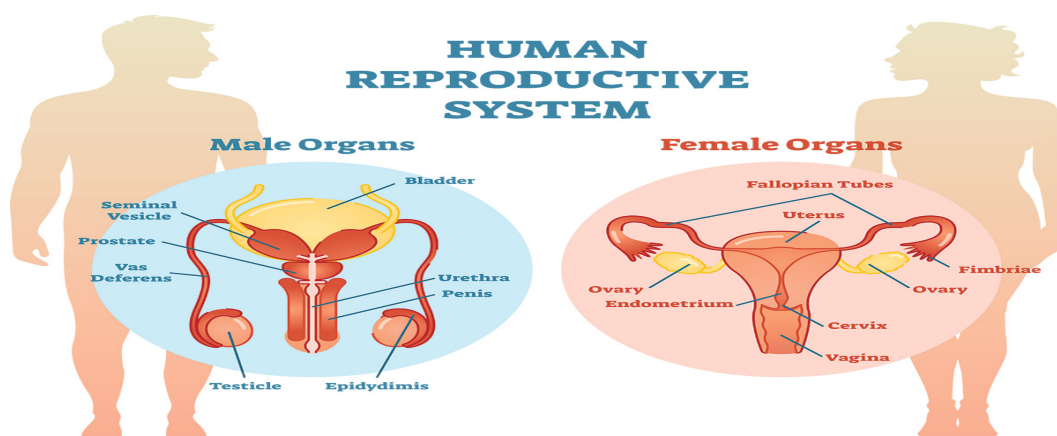
RTIs are second leading cause of the healthy life loss among women of reproductive age next to maternal morbidity and mortality (George, & Chacko, 2025). RTIs are a major public health problem affecting women's health, especially in developing nations (Brunham & Paavonen, 2020). Early RTI prevention is important as RTI leads to life threatening reproductive diseases such as pelvic inflammatory disease, miscarriage, preterm delivery, infertility, sexually transmitted infections and cervical cancer (Baker, Padhi, Torondel, Das, Dutta, Sahoo, Das, Dreibelbis, Caruso, Freeman, Sager, & Panigrahi, 2017). Self-care practices such as maintaining genital hygiene, using proper sanitary pads during menses and avoiding exposure to harmful agents which might disrupt the vaginal flora were essential in preventing the spread of RTIs. Safer sexual practices involving condom use and abstinence from multiple partners will go a long way in preventing the spread of RTIs (Oluwole, et al., 2020). Women who concentrate on reproductive health and take proactive health care steps (such as safer sex, contraception, and regular medical check-ups) not only keep themselves healthy but also protect their general welfare, and these women are indeed the best protected against RTIs and its associated complications. Hence, the study assesses knowledge of RTIs, self-care for prevention of RTI.

Conceptual Literature Review

Reproductive Health

The World Health Organisation (WHO) (1994 in Omokhabi 2014) defines RH as the state of having a good physical and mental overall well-being concerning the activities of the reproductive system, and not simply the lack of reproductive system disease or decadence. RH is a fundamental component of general health and well-being throughout life and across all interfaces of health, including maternal, adolescent, adult and aged health. This definition indicates that people can have pleasurable and safe sexual experiences and that they can attain the sex act frequency, timing, and number of sex acts that they want. Right to information and access to safe, effective, quality and affordable methods of family planning of their choice, and the right to the life and highest attainable standard of physical and mental health, to which they are not denied or impeded unlawfully (Maqbool et al., 2019).

RH is an essential component of health and well-being at all ages and is considered by the United Nations as a critical enabler for social, economic and human development, and a condition for peace and social development. Menarche and menstruation, fertility, pregnancy and childbirth, gynecological cancers, sexual transmitted infections, sexuality and sex as well as sexual health and function (Omokhabi, 2024). In the views of Omokhabi and Egunyomi (2016), ensuring and protecting women's health, particularly RH has a vital role in development. According to Akanbi et al., (2024) reproductive health was confirmed by the United Nations (UN) as the engine for social, economic and human development, and as a lifelong aspect of general health and well-being. The state of the reproductive system and the reproductive processes at all stages of life. These organs and hormone-producing glands include the pituitary gland located in the brain. The male and female organs (ovaries in females and testicles in males) are the corresponding reproductive organs throughout the system. They also serve as glands by secreting hormones that affect other organs (National Institute of Environmental Health Sciences, 2025)



Source: National Institute of Environmental Health Sciences (NIEHS) (2025).Reproductive Health <https://www.niehs.nih.gov/health/topics/conditions/repro-health>

Reproductive Tract Infections (RTIs)

RTIs represent a group of infectious diseases caused by bacteria, viruses, chlamydia, mycoplasma, and other pathogens that invade the genital tract and have significant physical and psychological consequences in terms of infertility, intrauterine growth retardation, premature labor, susceptibility to HIV, and a substantial socio-economic burden to the family (Kerubo et al., 2016; Xu et al., 2019). RTIs are a major challenge to public health, more so in low and middle-income countries (WHO, 2019). RTIs are a significant health problem for women globally impacting their physical, emotional and social health status. RTIs are globally prevalent and contribute to infertility, poor pregnancy outcomes and heightened susceptibility to HIV. RTIs remain a global public health challenge, linked to infertility, poor pregnancy outcomes and heightened risk of HIV acquisition (Xiang & Sun, 2025). RTIs include lower tract disorders such as vaginitis and cervicitis and upper tract disorders such as endometritis and salpingitis. RTIs range from lower tract disorders (vaginitis and cervicitis) to upper tract conditions (endometritis and salpingitis). Infections of the reproductive organs lead to a plethora of health complications such as infertility and pelvic inflammatory disease, and also increases a woman's susceptibility to HIV and other STIs (Balakrishnan et al., 2024). Some RTIs such as chlamydia and gonorrhoea can be without symptoms and in that case, regular screening is important to detect them early. When left untreated, infections of the reproductive tract may cause harm to a woman's health including becoming infertile, having an ectopic pregnancy and being more susceptible to getting the HIV (Teasdale et al., 2018).

In addition, RTIs can increase the risk of transmission of HIV and may have a role in other medical conditions such as cervical cancer and infertility (Cegolon, et al., 2022). Untreated, they may cause pelvic inflammatory disease (PID), ectopic pregnancy, or tubal infertility. It is estimated that there are over 374 million new cases of four of the curable STIs every year and women in low and middle-income countries carry a disproportionate burden (Alexiou et al., 2024). Among women of childbearing age and married women incidence of RTI was found to be more as they have frequent sexual activity and they are also subjected to medical complications due to childbirth and menstruation (Doley et al., 2021). Besides STIs, non-sexually transmitted RTIs like bacterial vaginosis and candidiasis are also a major cause of reproductive morbidity. Changes in vaginal microecology can cause mucosal immune function reduction, ascending infection, and inflammation, which may result in elevated risk such as cervical intraepithelial neoplasia (CIN) especially in the presence of high-risk human papillomavirus (HPV) subtypes (Žukienė et al., 2025).

Types of RTIs

Sexual contact is the primary means of transmission for at least 30 known pathogens that are bacteria, viruses, or parasites, and for others, sexual contact is a potential route of

Type of RTI:	Endogenous Infections	Sexually Transmitted Infections (STIs)	Iatrogenic Infections
Definition :	Infections caused by overgrowth of organisms normally present in the reproductive tracts	Infections acquired through sexual contact	Infections resulting from medical procedures or poor hygiene practices
Common Examples:	Bacterial Vaginosis Candidiasis (yeast infection)	Chlamydia Gonorrhea Syphilis Trichomoniasis HIV	Post-abortion Infections Infections from unclean IUD insertion
Causes:	Imbalance in natural vaginal flora	Transmission through unprotected sexual activity	Unsterile medical instruments Unsafe abortion/delivery
Key Symptoms:	Abnormal vaginal discharge Itching Odor	Vaginal discharge Pain during sex Lower abdominal pain Genital sores:	Fever Pelvic pain Foul-smelling discharge
Possible Consequence:	Discomfort Recurrence Pregnancy complication	Pelvic Inflammatory Disease (PID) Infertility Increased HIV risk	pelvic inflammatory disease (PID) Infertility Sepsis Maternal Morbidity

transmission (Torrone et al., 2021). Most of the disease burden associated with STIs is attributed to the eight major STIs: gonorrhoea, syphilis, chlamydia, trichomoniasis, hepatitis B virus (HBV), human papilloma virus (HPV), Herpes Simplex Virus (HSV) and HIV (Torrone et al., 2021). These infections can cause pain, discomfort, and even lead to serious health problems if ignored (Caritas, 2023). Some of the symptoms of common RTIs are abnormal vaginal discharge, itching & burning sensation, genital sore or ulcer and many others (Torondel et al., 2018). The untreated RTIs also related to high risk of infertility, HIV/AIDS, cervical cancer, ectopic pregnancy and many more such Symptoms (Anand et al., 2018).

Table 1 Types of RTI, Causes and Symptoms

Source: World Health Organisation (2019). Reproductive tract infections: Prevalence and management strategies. Geneva: WHO cited in Joshi, N. J., & Nambiyar, S. (2025). Awareness About Reproductive Tract Infections and Health Seeking Behaviour Among Women. *Indiana Journal of Arts & Literature*, 6(9), 19-26.

Self-Care Practices

Self-care, consisting of various types of activities aimed at protecting and enhancing one's own well-being, is essential to foster work engagement, sustain health, and prevent illness, and it is a key factor of clinical skill (Posluns & Gall, 2020). Self-care is about the activities and choices associated with health care that individuals make in order to care for their own physical, mind, social, and spiritual well-being and that of their families (Karimirad et al., 2022). Self-care is a series of behaviour modification in life style and mental attitude that contributes to the maintenance of health and personal well-being and the development of human potential. Self-care in health is what people do for themselves to establish and maintain health, prevent and manage illness. Self-care is being promoted as a median solution to the burden of healthcare costs on governments worldwide (Baraia, Abdallah & Nour, 2017). Self-care is what individuals, families, and communities do to maintain health, prevent disease, and deal with illness and disability, with or without support from a health worker.

Self-Care Practices for RTI Prevention

Genital /Vaginal Hygiene

Women must practice good genital hygiene if they are to feel comfortable in social interactions and avoid RTIs/STIs. When it comes to genital hygiene, each person takes care of themselves according to their own habits, beliefs and knowledge. These habits are performed in different ways and frequencies by individuals. Frequency and quality of genital hygiene is important to maintain women's health (Bulut, 2020). Genital hygiene is an important defense against genital infections and their serious sequelae. Personal hygiene is important in the treatment of many infectious diseases. Genital hygiene is an indispensable part in female health care, crucial for protecting the RH (Elorfaly, 2024). Certain practices of genital hygiene in women may increase susceptibility to STIs and other RH disorders.

Genital hygiene has been considered a good practice to prevent infection in intimate female regions, besides many other factors responsible for vaginal infections (Attieh et al., 2016). Moreover, vaginal hygiene is an important aspect of women's health. Women's vaginal cleanliness has become a critical tool that medical women and health professionals use to advocate for women's overall hygiene and personal health. The relevance of maintaining good genital hygiene to ensure good RH is not in doubt; however, the narratives of knowledge application/translation vary in depth in relation to the perceived outcomes of such practice. For example, Ulya et al. (2022) relate poor knowledge of genital hygiene with higher incidence of urinary tract infections and sexually transmitted infections. This observation is further supported by research showing that specific health education programmes may increase women's knowledge and decrease their risk of infection (Umami et al., 2022; Gökşin & Demirhan, 2024). Although they are generally in agreement that education is key, these studies predominantly rely on cross-sectional or intervention designs

with short follow-up, which limits understanding of changes in behaviour over the longer term and sustained health outcomes.

A key concern arising in the literature is the range of vaginal hygiene practices used by women; some may be protective while others are harmful. External washing is traditionally regarded as good hygiene, but vaginal douching, applying compounds inside the vagina and other intravaginal practices are controversial (Daher et al., 2022). While these activities are primarily prompted by the perception of hygiene or sexual gain, they can potentially alter the vaginal microbiome through pH modification or bactericidal effects on the beneficial flora. There seems to be consensus that genital hygiene, which consists of washing with water and possibly mild, non-irritant soap, contributes to maintaining a healthy genital tract by preventing the build-up of sweat, secretions and potentially pathogenic micro-organisms (Zeng et al., 2018; Kamazima, 2023; Sitkulanan et al., 2024). Nonetheless, the advice to use cleansing products needs to be nuanced, as their use, particularly harsh, scented or antiseptic products, has been repeatedly reported to alter the vaginal flora and its natural acidity, with consequent increased susceptibility to infections (Bui et al., 2018). This highlights the need for clearer distinction in the literature between good and bad practice in terms of hygiene.

In addition to bathing habits, other personal care activities, including wearing types of underwear and genital hygiene during toileting, are becoming recognised as key factors for genital health. There is evidence that wearing only breathable cotton underwear decreases moisture retention and microbial activity, while wiping recommendations (front-to-back) reduce the risk of contaminating the urogenital tract with enteric bacteria (Smeds et al., 2024). Nevertheless, there is a dearth of work that considers how these various practices are shaped by, and experienced through, other socio-cultural and environmental conditions, including availability of water, sanitation and hygiene (WASH) services. In general, as the literature is predominantly supportive of genital hygiene being protective against RTIs and associated conditions, there are limitations in methodology, including reliance on self-reported behaviours and mostly cross-sectional designs. In addition, significant gaps remain in what is known about the sustainability of hygiene education and the contextual determinants influencing women's practices.

Menstrual Hygiene Management

Menstrual Health and Hygiene (MHH) as an aspect of public health and essential human rights related to SDG by 2030 (Babbar et al., 2022 in Omokhabi, 2025). Menstrual hygiene is essential for women's health (Wagh, Upadhye & Upadhye, 2018; Vishwakarma, Puri & Sharma, 2020). Effective menstrual hygiene management (MHM) refers to women and adolescent girls having access to and use of clean materials to absorb or collect their menstrual blood; these materials can be changed in privacy as often as needed; women and girls can clean themselves with soap and water; and they can dispose of or bury the menstrual materials used or wash and reuse them. Studies conducted in Bangladesh, Kenya, and Nepal consistently suggest that access to and use of hygienic menstrual products such as

sanitary pads, tampons, and menstrual cups are associated with reduced risk of RTIs (Almeida-Velasco & Sivakami, 2019; Bhusal, 2020; Austrian et al., 2021). Despite this convergence, significant gaps remain, including limited longitudinal evidence and insufficient consideration of contextual factors such as socioeconomic status, cultural practices, and access to water, sanitation, and hygiene (WASH) facilities. Overall, while the literature supports a strong association between menstrual hygiene practices and reproductive health outcomes, further research employing robust methodologies is needed to clarify causal pathways and reconcile inconsistencies across studies.

Safe Sexual Practices

Safe sex is a basic self-care practice that prevents RTIs and contributes to protection of individual and public health. The most effective way to prevent transmission of an RTI is to use condoms or other barrier methods during sexual activity. When used correctly, condoms are a physical barrier that can limit contact with the infectious organisms that cause many RTIs, such as HIV, chlamydia, gonorrhea and syphilis. However, their efficacy is contingent upon the appropriate type selection, proper application and no expiration or damage to the product. In addition, individuals who engage in safe sexual practices and use condoms and other barrier methods correctly can minimize their chances of contracting an RTI and help preserve the health of their reproductive system and their well-being as a whole (Ramos, et al., 2020). STI prevention incorporates the so-called ABC approach, that is to say: abstain, be faithful and apply condoms (Rukundo et al., 2016). Male condoms have been used for centuries to prevent STIs (Amy & Thiery, 2015), and have regained a place of prominence as a key HIV-prevention tool (Beksinska et al., 2020). When male condoms are used consistently and correctly, they are highly effective in preventing STIs (WHO, 2019). A host of other health, social, and economic benefits come with family planning; it can contribute to slowing down the pace of HIV spread, fostering gender equality, alleviating poverty, spurring socio-economic growth, and conserving the environment (Omokhabi, 2020).

Negotiating Safe Sex with Partners

Safe sex negotiation is a term that refers to sexual partners negotiating and agreeing upon methods of preventing STIs and unplanned pregnancies. This process is important in defining boundaries, expectations, and informed sexual decision making (Aboagye et al., 2021). Safe sex practices are a combination of actions used to prevent STDs and unintended pregnancies. One of the obstacles to proper knowledge and practice of women RH among women is spouse or husband disapproval of the use of family planning methods or contraceptives (Olajide & Omokhabi, 2014). Communication with sex partners is needed for safe sex practices because it allows partners to share their sex histories and preferences, talk about safer sex options, and establish boundaries (Imo et al., 2022). They should also talk about condom use before having sex to ensure a shared understanding as well as an agreement on safe sex practices (Olawore et al., 2021; Abdulazeez et al., 2023).

Active listening, empathy, and a mutual respect are also required for safe sex negotiation (Sutton & Paddon Rhoads, 2022). Open dialogue and a desire to understand and meet each other's needs help create a positive environment for negotiation for couples. Prioritising mutual respect and informed consent is part of any successful negotiation of safe sex. In addition, information on a person's attitudes, beliefs and motivations around sexual behaviour is required for safer sex motivation (Igbeneghu&Ademokoya, 2020). It also means using good communication techniques, including honesty in describing the benefits of contraceptive use and the risk of not using it (Putra et al., 2021). Through the empowerment provided by dialogue and consensus around safe sex practices, people can take more control over their reproductive health, reduce their risk of RTIs, and build healthier, more respectful, and gratifying relationships that enhance overall wellbeing.

Avoiding Irritants and Allergens

Avoidance of irritants and allergens is a further important self-care measure in the prevention of RTIs. The genital skin and mucous membranes are very sensitive and contact with some chemical agents may alter natural protective barriers leading to genital irritation, inflammatory reaction and increased risk of infections (Jindal, 2025). Some things, such as scented soaps, detergents or latex condoms, can irritate the vagina and make it discharge abnormally including with white discharge. An allergic response or irritant can alter the character of your vaginal discharge and white discharge is one of the symptoms of this condition. Scented soaps, detergents, feminine hygiene products or latex condoms are some of the products that can irritate the sensitive lining of the vagina, causing inflammation and more vaginal discharge. This discharge may be white or cloudy and may be associated with itching, redness or swelling of the vulva (Dudhat, 2024). Products like fragranced soaps, bubble bath, vaginal douching and scented hygiene sprays are frequently implicated in genital itchiness due to their tendency to disrupt the natural pH and/or microbial flora that helps in protecting from pathogens. Hence Washing the genital region with plain water and refraining from use of perfumed soaps, body washes, bubble baths, shampoos and antiseptics is the best hygiene advice from credible medical sources (Stewart, 2019) and repeated exposure to these products should thus be avoided to conserve genital health.

In addition, personal care routines should focus on using personal care products alone. The sharing of items such as towels, razors, or washcloths can promote the spread of microorganisms and risk of infection. What you wear also makes a difference when it comes to comfort and health of your genitals: loose clothing reduces friction, moisture retention and mechanical irritation three factors that are considered to be predisposing factors to RTIs. Also, heightened attention to potential allergens present in common household items, such as latex products and specific types of synthetic fibers, is warranted as allergic responses can weaken the skin barrier and serve as portals of entry for infectious organisms (Scheinfeld, 2023). Through the avoidance of potential irritants and allergens, people may be able to decrease their risk for RTIs as well as maintain reproductive health and general wellness.

Regular Screening and Testing

HIV testing, and for other STIs, is a key entry point to treatment-based prevention (Freeman et al., 2018). A variety of options are now recommended to enable early and regular testing for HIV and to confirm diagnosis, with the use of rapid point-of-care tests in clinical and non-clinical settings, as well as self-testing (WHO, 2020a). A routine medical examination usually consists of an individual's medical history recollection, followed by a physical examination, and then any required laboratory workup. WHO (2020) has also highlighted the importance of regular check-ups for early detection of silent diseases leading to early intervention. The goal of periodic health examination could be summarised as early detection and prevention. Such examinations allow for early detection of health problems before clinical symptoms develop, so they can significantly reduce the risk of severe complications and result in better health outcomes. In addition to the positive effect for the individual, regular testing contributes to the public health by decreasing the prevalence of RTIs in the community (Oharume, 2020). As a result, routine testing promotes not only physical health but also responsible health behaviour, awareness of the reproductive health status and healthier and more informed sexual relationships.

Diet and Nutrition

Keeping good diet and nutrition is a basic self-care behaviour that is considered to have an impact on the prevention of RTIs. Probiotics are live microorganisms most commonly bacteria that confer health benefits for humans when they are ingested in sufficient numbers. These live organisms occur naturally in some foods including yogurt, kefir, sauerkraut, kimchi, and kombucha, or can be taken as dietary supplements. Probiotics act by rebalancing the gut microbiota, the colonization of the gut with beneficial bacteria, and by direct and indirect interaction with immune cells within the gut-associated lymphoid tissue. These events synergistically promote different physiological processes, including digestion, skin health and immune system function, and may also affect mental health through gut-brain axis regulation (Wilkins & Sequoia, 2017). Good nutrition promotes immune function and the body's ability to fight infectious agents, as well as general physiological health. A balanced diet containing an adequate amount of fruits, vegetables, whole grains and protein (preferably from lean sources) supplies all the necessary vitamins, minerals and macronutrients that are required to keep reproductive health at its best. Specifically, antioxidant-rich foods including berries, leafy green vegetables and other plant-based foods may help guard cells against oxidative stress and aid in tissue repair and recovery.

Theoretical Framework

Pender's Health Promotion Model (HPM)

The framework for the study was based on the Health Promotion Model (HPM), formulated by Nola Pender in 1982. This theory focuses on health-promoting behaviours and identifies

how individual experiences, beliefs, and motivations affect such practices. As per the theory, people will be more likely to adopt preventative health behaviours if they are aware of the importance of those behaviours, have sufficient knowledge about them, and are confident in their abilities to perform the behaviour.

Pender's Health Promotion Model contains three major categories of constructs that are related to health-promoting behaviours. The first category involves individual characteristics and experiences and includes past-related behaviours and individual factors. Previous experiences determine an individual's likelihood of performing similar behaviours in the future, whereas biological, psychological, and socio-cultural individual factors affect health decisions (Pender, Murdaugh, & Parsons, 2015). In this context, the women's previous experiences with RTIs, educational status, cultural beliefs, and socioeconomic background might affect their behaviours.

Behaviour-specific cognitions and affect constitutes the second category of factors involved in health behaviour, which encompasses factors that directly impact on health behaviours that promote health. This includes perceived benefits of action, perceived barriers to action, perceived self-efficacy, affect related to action, interpersonal influences, and situation influences (Pender, Murdaugh, & Parsons, 2015). The likelihood of women adopting preventive self-care measures against RTIs increases if they see the value in proper genital hygiene, safe sex, and early diagnosis. Stigmatization, lack of economic resources, and cultural limitations may constitute barriers in taking up preventive actions. Another important element in encouraging healthy reproductive health behaviour is self-efficacy.

The third type refers to the behavioural outcomes, which entail the dedication to a certain plan and the engagement in the health-promoting behaviour. This constitutes the final element of the model (Pender, Murdaugh, & Parsons, 2015). Within the scope of this study, the anticipated behavioural outcomes include effective self-care behaviours, high utilisation of reproductive health care services, early intervention measures, and reduced rates of reproductive tract infections among women. The applicability of Pender's Health Promotion Model to this study is due to the fact that prevention of RTIs mostly involves the knowledge, perception, personal hygiene behaviours, awareness of reproductive health issues, and the readiness of women to practice preventive self-care actions. According to this theoretical model, women who have sufficient knowledge about RTIs and comprehend the value of preventive measures would be engaged in health behaviours, such as proper genital hygiene, safe sex practices, early medical assistance, and the use of reproductive health services.

Furthermore, the theory acknowledges the effect that interpersonal, socio-cultural, and environmental variables have on encouraging or discouraging health-related behaviour. Within the scope of this study, some of the socio-cultural and environmental variables that might prevent women from engaging in healthy self-care practices against reproductive tract infections include cultural beliefs, stigmatization, poverty, lack of reproductive health education, and access to health care. Another critical aspect of Pender's Health Promotion

Model is the emphasis on perception of benefits, self-efficacy, and motivation when fostering healthy behaviours among individuals. A woman will engage in healthy practices if she believes that she has the capacity to do so and recognises the significance of her actions. This means that Pender's Health Promotion Model validates the use of health education programmes and motivational interventions when enhancing reproductive health practices among women.

Methodology

In this study, a narrative review method was utilised to explore evidence on the current knowledge about RTIs among women, their self-care behaviours for prevention of RTIs, and barriers that may hinder them from adopting preventive behaviours and visiting health facilities when necessary. Narrative review method was deemed to be appropriate since it allowed for a holistic review and interpretation of evidence from a variety of studies focusing on reproductive health, RTIs, self-care preventive measures by women, and their healthcare-seeking behaviours. Appropriate literature was searched using Google Scholar, PubMed, ResearchGate, and ScienceDirect databases based on the following keywords: reproductive health, reproductive tract infections, types of reproductive tract infections, knowledge of RTIs among women, self-care practices, healthcare-seeking behaviour, barriers to healthcare-seeking behaviour, and self-care measures of women for RTI prevention.

In order to ensure the review was based on the latest evidence, only research papers published between 2018 and 2026 were selected. Any paper published prior to 2018 was not considered during the selection process. Qualitative and quantitative studies written in English were considered suitable for review since they were relevant to the topic at hand. Furthermore, any peer-reviewed journal articles, books, conference papers, and institutional papers dealing with women's awareness of RTIs, as well as self-care behaviours and healthcare-seeking behaviour, with regards to RTI prevention were selected for review. Papers not relevant to the review and lacking in sufficient data on the subject matter were not considered.

After screening for studies that met the eligibility criteria, selected studies were critically analysed using thematic analysis according to Braun and Clarke (2006). This process involves becoming familiarised with literature, coding of the findings, identifying patterns in the data, and generating themes. Major themes that emerged from the synthesis of data collected from the selected studies include: (1) Women's Knowledge of Reproductive Tract Infections; (2) Women's Self-care Practices in Preventing Reproductive Tract Infections; and (3) Barriers Influencing Women's Adoption of Self-care Practices in Preventing Reproductive Tract Infections. The thematic synthesis provided an overview regarding women's knowledge about RTIs, their self-management behaviours for RTIs, and constraints associated with self-management behaviours and seeking health care. Furthermore, the narrative review methodology helped combine findings from various settings and provide a broader perspective regarding current studies about reproductive health among women.

Objectives of the Review

The literature reviewed in this study was carefully examined and discussed based on the following objectives to:

- i. examine women's knowledge of reproductive tract infections (RTIs).
- ii. assess women's self-care practices in the prevention of reproductive tract infections.
- iii. identify barriers affecting women's adoption of self-care practices and healthcare-seeking behaviours in the prevention of RTIs.

The review focused on these thematic areas to provide a better understanding of women's knowledge, preventive practices, and challenges associated with reproductive tract infection prevention.

Findings and Discussions

Theme 1: Women's Knowledge of Reproductive Tract Infections

In line with the thematic analysis approach by Braun and Clarke (2006), the literature findings were categorised into three major themes: awareness and information about RTIs, knowledge as a factor influencing health practices, and differences in RTI knowledge based on demographics.

Awareness and Sources of Information on RTIs

Awareness levels and sources of information concerning RTIs in women was another significant trend from the literature reviewed. Though awareness of RTIs was indicated as being high in most of the studies, a lot still remained to be understood about the infection by women since there were many gaps in their knowledge of RTIs as regards causes, symptoms, risk factors, and how to prevent the condition. Some of the research showed that healthcare workers and health education programmes were some of the main sources of information for RTIs in women (Balakrishnan & Kannan, 2024; Singh & Kushwaha, 2022). Though women had access to information on RTIs, their knowledge levels concerning the subject was not impressive, especially in cases where they lived in rural areas. These findings suggest that awareness alone may not be sufficient to ensure comprehensive understanding of RTIs.

Knowledge as a Determinant of Preventive Health Behaviours

One other common subtopic among the studies was knowledge and preventive reproductive behaviours. The articles reviewed showed that women who had greater reproductive health knowledge would be more prone to exhibit positive reproductive health behaviours. Such behaviours would include the use of menstrual pads, practicing safer sex behaviour, and accessing quality maternal health care services (Verma et al., 2024). On the other hand, a lack of reproductive health knowledge led to improper hygiene behaviours, poor adoption of preventive measures, and the presence of RTIs. It is clear that knowledge of reproductive health has a considerable influence on women's decisions and actions related to health.

Variations in RTI Knowledge Across Demographic Groups

The literature review showed that there was variation in terms of RTIs knowledge and experiences among people in various demographics. Although younger women had adequate RTIs knowledge, it was noted that women who were older experienced more RTIs complications. The symptoms included vulvar itching, discharge from the vagina, and urinary tract infections (Zhang et al., 2024). The implication here is that there is a need to understand that reproductive health knowledge and experiences vary depending on age, location, and socioeconomic status. It can be concluded that certain groups need educational interventions for their better reproductive experiences.

Summary of the Theme

In summary, based on the studies analysed, although there is general awareness regarding reproductive tract infections, there are still some knowledge gaps when it comes to knowing the causes, symptoms, risk factors, and prevention strategies. From the results shown above, it can be concluded that knowledge has a significant influence on preventative health behaviours and reproductive health. Differences in knowledge among demographic groups, especially those in rural areas, stress the need for developing an education programme suited to the target population. This shows that there should be continued reproductive health education and awareness programmes to increase awareness among women about RTIs and prevent them from acquiring such reproductive diseases.

Theme 2: Women's Self-Care Practices in The Prevention of Reproductive Tract Infections.

By applying the thematic synthesis approach by Braun and Clarke (2006), the evidence was classified into three sub-themes namely: menstrual hygiene practices and prevention of RTIs; vaginal hygiene practices and risk of RTIs; and nutrition/healthy living habits as preventive strategies.

Menstrual Hygiene Practices and RTI Prevention

One significant pattern observed in the reviewed literature was that of menstrual hygiene affecting women's reproductive health results. Multiple research studies have suggested that poor menstrual hygiene was associated with a higher likelihood of developing urinary tract infections and reproductive infections among women (Balakrishnan et al., 2022; Borg et al., 2023; Das et al., 2025). In contrast, following adequate menstrual hygiene procedures, such as using clean absorbents and timely changing of pads or tampons, could help avoid developing RTIs in the future (Chakrabarty & Singh, 2023). Frequent washing and hygiene practices also led to the prevention of infections like candidiasis and bacterial vaginosis among women (Torondel et al., 2018). It can be concluded from these results that menstrual hygiene is a crucial aspect of women's self-care habits and affects their reproductive health significantly.

Vaginal Hygiene Practices and RTIs Risk

Another consistent subtheme focused on the impact of vaginal hygiene practices in determining the likelihood of women experiencing RTIs. While it is common knowledge that personal hygiene plays a significant role in reproductive health, the existing literature shows that vaginal douching poses a potential threat to a healthy reproductive system. Studies indicate that vaginal douching increases the risks of various reproductive diseases such as pelvic inflammatory disease, bacterial vaginosis, sexually transmitted infections, infertility, and pregnancy complications (Gupta et al., 2019; Sabo et al., 2019; Marconi et al., 2020). This subtheme reveals that vaginal douching creates an unfavourable environment by disturbing the vaginal microflora and vaginal pH balance, reducing immunity and leaving a person vulnerable to various infections (Ranjit et al., 2018; Shen et al., 2021). In other words, women who practice vaginal cleansing for the purpose of maintaining cleanliness put themselves at greater risk of RTIs.

Nutrition and Healthy Lifestyle Behaviours as Preventive Self-Care

This review pointed out the significance of nutrition and healthy lifestyle behaviours as methods of prevention and self-care in maintaining reproductive health. From the studies conducted, healthy dietary behaviours were linked with favourable reproductive health statuses and minimised chances of having certain reproductive disorders. Sufficient consumption of dietary fiber, vitamins, probiotics, and other dietary supplements was stated to be helpful for improving reproductive health and building body defenses against infections (Magagnini et al., 2022; Cai & Chen, 2023; Nigussie & Yosef, 2020; Shen et al., 2025; Salmeri et al., 2026). It should also be noted that adequate hydration is another method of self-care that positively affects urine production and reduces the likelihood of infections occurring. Collectively, these findings underscore the role of healthy lifestyle choices in promoting reproductive well-being and preventing RTIs.

Summary of the Theme

In general, the studies reviewed above have shown that the self-care measures undertaken by women include menstruation hygiene, vaginal hygiene, diet, and lifestyle issues that have the potential either to prevent or cause reproductive tract infections. In this regard, it is evident that even though some women follow practices that help them prevent reproductive tract infections, others still pursue practices that negatively impact their reproductive health. This clearly shows that there is a need for continuous educational programmes aimed at informing women about the need for proper menstrual hygiene, avoiding practices that lead to vaginal infections, eating a balanced diet, and making proper reproductive health decisions.

Theme 3: Barriers Affecting Healthcare-Seeking Behaviour among Women on Reproductive Tract Infections

Using Braun and Clarke's (2006) thematic analysis framework, the evidence was synthesised into four recurring subthemes: individual barriers, social and cultural barriers, healthcare provider-related barriers, and healthcare system-related barriers.

Individual Barriers

A key theme among all the literature examined is that of the impact of personal level factors on the healthcare-seeking behaviours of the women involved. The factors that act as a hindrance to proper healthcare for these women include lack of knowledge on RTIs and reproductive health issues, perceived vulnerability towards any infection, lack of awareness about available healthcare services, financial problems, and domestic and job-related engagements. Women who thought RTIs symptoms were insignificant and did not have adequate knowledge about reproductive health were unlikely to visit doctors to avoid possible infections (Timilsina et al., 2024; Yadav et al., 2025).

Social and Cultural Barriers

An additional sub-theme that emerged dealt with how social and cultural determinants affected seeking healthcare services. The stigma of sexually transmitted or reproductive illnesses was found to be an important barrier to seeking health care. The fear of being judged by others, feelings of embarrassment, lack of confidentiality, and inadequate support from family members led women to avoid disclosing symptoms or getting treated for their conditions. This resulted in delayed health-care-seeking and made these women prone to having undiagnosed RTIs (Yadav et al., 2025).

Healthcare Provider-Related Barriers

Further, the study revealed various barriers associated with healthcare professionals, which hindered the provision of reproductive health services to women. These barriers included negativity on the side of healthcare providers, poor counseling service delivery, poor communication skills, and inadequate health education. It is evident from the literature that women will seek healthcare services whenever they receive respectful and supportive health services together with relevant health information. However, failure of effective provider-patient relationships might prevent women from seeking healthcare and practicing preventative actions (Jackson-Gibson et al., 2021; Timilsina et al., 2024).

Healthcare System-Related Barriers

The third type of barriers that came up in regard to accessing healthcare services was due to the characteristics of the healthcare system itself. The low availability of healthcare facilities, insufficient funding for reproductive health care programmes, overcrowding in primary

health care (PHCs), shortage of health workers, and heavy workload on health workers were recognised as obstacles within the healthcare system that affect both the availability and quality of care. Such barriers may negatively impact the timely diagnosis and treatment, screening activities, and health promotion efforts (Jackson-Gibson et al., 2021; Alzahrani et al., 2022). The results of Omokhabiani and Fajimi (2023), in turn, corroborate those related to the healthcare system-related barriers identified in this review. Specifically, the authors argued that rural women, who have a huge contribution to sustainable development, are still experiencing limited access to healthcare services, education, and funds. Consequently, this limitation may limit their chances to educate themselves on reproductive health and receive necessary treatment for reproductive tract infections.

Summary of the Theme

Generally, the reviewed studies show that the decision to seek reproductive healthcare among women is influenced by the interplay of multiple factors including personal, social and cultural, healthcare provider-related, and healthcare system-related barriers. Such barriers affect the diagnosis and treatment of RTIs resulting in poor reproductive health outcomes. The results indicate that multifaceted strategies are necessary in addressing the identified issues, including the enhancement of reproductive health literacy, stigma reduction, family/community support, capacity building among healthcare providers, and the provision of accessible reproductive healthcare services.

Conclusion

The study identified the need for more education among women on RTIs, as well as their preventive self-care activities. While some women have elementary information about RTIs, there still exists the challenge of misconceptions, low reproductive health literacy, and lack of access to information about health. It was noted that many women fail to engage in appropriate self-care activities like hygiene of the genital tract, safe sex, visits to the clinic and use of health care facilities due to various challenges like poverty, stigma, fear, lack of family support, lack of adequate health facilities, and sociocultural constraints.

The results also revealed that lack of knowledge and negative self-care practices pose very serious threats to women's health and wellbeing. Lack of preventive care leads to an increased risk of infection, late detection, repeated infections, infertility, pelvic inflammatory disease, pregnancy complications, psychological problems, and ultimately lowers women's quality of life. Women who have good knowledge about reproductive health, on the other hand, tend to practice good self-care behaviours that result in timely detection and treatment, thus improving women's reproductive health conditions. Consequently, there is a need to enhance women's knowledge of RH and adopt good self-care practices to reduce the impact of RTIs.

Recommendations

Efforts towards RTIs' prevention and control should be a joint responsibility among the various stakeholders, who have different but overlapping duties in the process.

- a) The Federal government, together with the state governments and other non-governmental organisations (NGOs), should subsidise the costs involved in RTIs diagnosis and treatment in order to alleviate the high financial costs that discourage women from seeking treatment.
- b) Health education specialists, community health workers, and media groups should conduct reproductive health education programmes within schools, markets, churches, and other places within the community, in order to create awareness among women regarding RTI prevention and treatment.
- c) Community leaders, religious leaders, and counselors should encourage family support to ensure reproductive health services among women by promoting communication and support in seeking treatment of reproductive tract infections and reproductive health services.
- d) Hospitals and primary healthcare centers should provide reproductive health service providers with training in offering reproductive health services with confidentiality, respect, and no judgment so as to increase women's confidence in accessing these services.
- e) There needs to be provision of adequate financial support and training for health professionals and pharmacists in order to improve their counseling skills and teach women how to properly take care of themselves through reproductive self-health measures such as safer sex, menstruation, emergency contraception, and infections avoidance.

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