

REVIEW ARTICLE

Tropical Parasitic Diseases and Women

O. O. Okwa

Department of Zoology, Faculty of Science, Lagos State University, Lagos, Nigeria

Reprint requests to: Dr. Omolade O. Okwa, Department of Zoology, Faculty of Science, Lagos State University, P. M. B. 1087, Apapa, Lagos, Nigeria. E-mail: okwaomolade@hotmail.com

Abstract

Tropical parasitic diseases constitute the greatest threat to the health and socio – economic status of women as a gender and social group. There are some gender specific ways in which parasitic diseases affect women in contrast to men due to differences in exposure, occupational risk, sociocultural behavior, gender roles and practices. These parasitic diseases confer some social stigma, which affects the health seeking behavior of women. Women are therefore important in the control of these parasitic diseases and they are key agents of change, if they are included in community control programs. Women need more attention in endemic areas as a group that had been neglected. This deprived and excluded group have got vital role to play, as discussed in this review.

Key words: *Tropical parasitic diseases, women, Africa, sociocultural*

Résumé

Les maladies parasitoses tropicales constituent une tres grande menace pour la santee. Un probleme socio economique aux femmes comme un genre et en tant qu'un groupe. Ils ya des manieres specifiques par les quelles ces maladies attaquent les femmes contrairement aux hommes a cause de la facon differente d'exposition, occupation, reagissement culture et social Cette maladie entraine une honte sociale et nuire la santee des femmes. Les femmes sont donc tres importantes, et meme des elements cles a combattre cette maladie si l'on les incure dans programmes de la commisnante. En tant au qu'un groupe exclusif et negligee les femmes ont besoin de beaucoup d'attention puis quelles ont un role importante a jouer dans ce contexte.

Mots cles: *maladies parasitoses tropicales, femmes, Africa, socioculture*

Introduction

Gender as described by Tropical disease research/World Health Organization (TDR/WHO) is the sociocultural aspect of male – female dichotomy as distinct from sex, which denotes a physiological basis of male – female differences. Gender refers to qualities, behaviors and roles ascribed to different societies by men and women.¹

Gender is determined not by biology but the socio political and economic context.² Bundy,³ pointed out that there is a gender related specificity and susceptibility in infection. Males and females differ physiologically and do different things, thus there are gender differences in average rates of parasite prevalence, incidence or intensity of infection, chemical outcome and susceptibility.

Recent research has drawn attention to the relation ship of gender and health and highlighted the

significant disparities that exist between men and women.⁴ Brabin⁵ reported that certain factors are responsible for differential susceptibility of males and females to diseases, that disease afflict males and females in different proportions and women appear to have higher morbidity rates. Sex differences are most obvious with regard to reproductive health and gender is therefore implicated across all diseases. Many of the problems that women face with regards to tropical diseases ie, Leprosy, malaria, Schistosomiasis, Filariasis (Lymphatic filariasis and Onchocerciasis), Trypanosomiasis, Chagas disease, African Trypanosomiasis and Leishmaniasis (which are diseases of poverty) are similar to those they face, for other diseases.

Bundy,³ pointed out that certain factors are responsible for differential susceptibility and specificity to infection. Gender inequality compounds this problem. Bundy,³ stated that woman tend to have

more episodes of illness and more physician visits, even when visits due to gynecological and obstetric reason are discounted, in addition to infectious diseases, poor water supply, inadequate sanitation and lack of other health infrastructure.

Wide ranges of other social and cultural factors negatively impinge upon (women's) physical well-being and accessibility to appropriate health services.⁶ Limited access to education for women suggests that women are less likely than men to have information about disease and their presentation. They lack control of financial resources (often scarce) and therefore give their health low priority. They are also less familiar with medical services and may be reluctant to use them.⁵

This review looks at the effect of Tropical parasitic disease on women and how changes can be made ie, raising the status of women in terms of participation in health and development projects.

The role of women in self-help community directed treatment, a sort of control of health of women by women and for women and their household at large are discussed.

Social Economic Effects of Parasitic Diseases on Women

The sequel of untreated infection particularly for parasitic diseases which causes gross disfigurement, (Filariasis, Leprosy, Onchodermatitis and Leishmaniasis) further compromise women's health and carry social costs, including social rejection, isolation, and divorce.^{7,8} The links between gender, work, health and illness are complex. Illness in women affects their work capability, including both household and other productive work in general, and sickness limits a women ability to work.

The sexual division of labor and the sexual division of responsibility together with local ecological, environmental, economic and cultural factors influence exposure to infection and risk of disease. The links between women and health encompass women's roles in the production of food and goods, as wage earners and in biological, domestic and social reproduction through childbearing and child rearing, through their care of the sick and more generally the maintenance of domestic environment.⁹

Parasitic diseases constitute the greatest threat to the health and Socio economic status of women.¹⁰ Control of disease is part of economic development because developed countries are those that have been able to bring the parasitic diseases under control. Control of disease will lead to improvement of human health and raise the quality of life and productive capacity of people.¹¹

Traditional African societies are patriarchal as reflected in customs beliefs and religious practices of the people. Under this system, women receive less attention than they deserve. Discussions about women's health tend to conceptualize women as mothers, wives, health providers, reproducers, food

producers, processors, fetchers of fuel and water. Women's health and well-being should rather be the goal of specific programs.

Women represent a strategic and important position as a social group in the control of parasitic diseases, because they are at great risk.¹² They could serve as vehicles of social mobilization, because they occupy an important position in the domestic of Human societies and are very influential. Hence, Women could help to ensure greater compliance in community based treatment programs. The participation of the women (that is a process of involving the deprived and the excluded) is a dynamic venture in disease process which would help at proper knowledge and perception of disease. Women could be used in drug distribution, vector control, family and community support to increase compliance to treatment. This would help control bodies and international efforts at controlling the diseases.

Women are key agents of change and target – group for any development program.¹³ If development involves improving conditions of living, then women should always be included in development programs especially in the rural areas. They should not be only victims but also beneficiaries of economic development. Bushy,¹⁴ opined that women are great human resource and must therefore be both the subject and object of national development. Maintaining a healthy household and community is seen as a woman's responsibility, but women are often not included in village health committees.¹⁵ TDR news, reported that in many societies, the length and arduousness of a woman's working day means that her health problems are far advanced before they become important enough to do something about. A woman's health problems are not serious until she cannot stand, walk or talk. A woman never gets sick, even when she is ill to the point of death; she is expected to perform her duty.¹⁶ It seems women are being valued mainly in terms of their procreative and productive roles. These barriers should rather be removed. Failure to do so is discourteous, wasteful, short sighted and inhuman.

Millions of women aspire to a better life and want to participate in societal activities. Programmes have failed because women did not participate. In order to achieve effective disease control, the peculiarities, needs and special requirements of women needs attention.¹³

Reasons for Gender Difference in Infection Pattern

Differential exposure to infection

This could arise as a result of gender differences in Occupational risks, socio cultural behaviors, gender roles and practices. Differences in risk of exposure accounts for differences in infection patterns. Exposure arises from four major basic needs ie, occupational, recreational, socio-cultural and domestic.

Socio-cultural practices and behavior result in differential exposure to infection. Gender bias in

infection prevalence is most marked where socio-cultural factors result in only one of the gender being exposed to an infectious environment.¹⁷ The most obvious example of gender bias in exposure is where only one gender enters the habitat of an intermediate host or vector of a parasite. Women have more constant touch with water for various activities in terms of household duties.¹⁸ Women were reported as working twice as many hours than men worldwide.¹⁹ Fetching of the wood, water, childcare and agricultural labor are some of the works of women, so they could be more vulnerable to infection.

Innate sensitivity and host resistance

Infection status is determined not only by the degree of exposure but also by the degree to resistance. Variations in individual susceptibility are encompassed within each gender. Host resistance, whether innate or acquired may influence the outcome of an infection event.⁵

Women and Their Health With Regards To Tropical Parasitic Diseases

The Tropical parasitic diseases to be considered are Malaria, Schistosomiasis, Onchocerciasis, Lymphatic filariasis, Leishmaniasis, Guinea worm, Hook worm, Trypanosomiasis

Malaria

Prevalence of malaria infection increase in women during Pregnancy. Malaria causes anemia and low birth weight babies. This is due to the loss of previously existing immunity.²⁰ This condition is often serious among adolescent girls, who do not receive adequate treatment for malaria because of social stigma associated with pregnancy in teenagers.²

According to TDR,¹ cultural expectations often demand stoic acceptance of malaria due to low status of women in rural communities. A woman may need her husband's permission before she seeks medical care. In most cases women seek first to home remedies and traditional medicines for their illnesses. If these fail and symptoms persist, they seek low cost treatment in the form of over the counter drugs. Women consider this type of treatment to be most effective for malaria.⁸

Women often tolerate symptoms of malaria until they are critically ill because of the perception that sick women are mean or lazy. Women are reproached when there are malaria epidemics for having failed as custodians of health. Women need information to help them recognize the symptoms of malaria in themselves and family members eg, fever chills, headache.¹⁶

Malaria in pregnancy is widespread. It endangers the health of women and prospects for the new born. Health services are inaccessible to many of these children and women. Women in malaria endemic areas run an increased risk of infection during pregnancy. The placenta is a preferred site of parasite accumulation and placental malaria is

associated with low birth weight of the baby and anemia of the mother. Resistance to placental malaria has been observed in women after several pregnancies, compared to women in their first pregnancies. Co-infection with HIV significantly increases the prevalence and extent of placental parasitaemia, and the resistance to placental malaria normally seen in women following several pregnancies is lost. Pregnant women with malaria infection are usually anemic; this elicits the precarious state posed to this vulnerable group due to the adverse effect of malaria in pregnancy.

Malaria accounts for 6.5% of abortions, 15% of premature deliveries and 0.7% death in utero. The situation is further compounded by poor socio-economic status of most rural dwellers.²¹ Pregnant women and children will continue to be two of the most important risk groups. Pregnant women are especially vulnerable because of iron deficiency, a special problem in malaria endemic areas. When children are sick from malaria, women usually bear the psychological effects. Severe convulsions, fever and other symptoms affecting children leave a psychological effect of fear and restlessness on the mothers.

Schistosomiasis

The prevalence patterns of Schistosomiasis are often complex in women because of exposure and innate susceptibility.²² Women are exposed to Schistosomiasis because of their inevitable water contact behavior. According to TDR / WHO,² failure to consider gender difference in Schistosomiasis may lead to errors in the design of experimental surveys and diagnosis. Infection may miss diagnosis in pregnant women and girls at puberty because of low tumor necrosis factor levels (TNF). Low TNF is associated with reduced schistosome fecundity and schistosome eggs are found in the cervix, vulva, vagina, ova, fallopian tubes and placental and this seems to show a correlation with infertility in women living in hyper endemic focus of Schistosomiasis.

According to TDR/ WHO,² Female genital Schistosomiasis (FGs) is held to be an important social and medical problem. The condition is associated with pathological manifestations in the female lower genital tract such as tumors and ulcers. There is also some evidence that it is associated with complications as infertility, abortion, pre-term delivery and extra uterine pregnancy (a life threatening condition). FGs may facilitate the spread of some Sexually Transmitted diseases (STDs) especially Human immunodeficiency Virus (HIV) although more work is needed to understand this interaction and the relationship between urinary Schistosomiasis, infertility and implications of the diseases on married sexual life of women. There is chemical, immunological and epidemiological evidence that FGs might be a risk factor for the transmission and the propagation of STDs and HIV, 75% of women living in *Schistosoma hematobium* endemic areas (Africa and Middle East suffer from it. It could be diagnosed as a sexually transmitted

disease because of its varying clinical picture.

Onchocerciasis

Most studies on Onchocerciasis reported significant differences in infection among gender.¹² Higher prevalence was usually found in the gender more exposed to *Simulium* fly bites. Though, Okwa²³ attributed resistance to fly bites in women to hormonal effects and the protective mode of African dressing. According to Brabin,⁵ there is little substantial evidence that Onchocerciasis is less frequent in females on the basis of exposure only. Gender differences are most marked in savannah areas of high transmission where worm burdens are lower from early childhood in females as are ocular lesions. In forest areas, gender differences are less marked and ocular lesions similar in males and females. Brabin⁵ also stated that gender differences are most evident under conditions of high transmission but women appear to be less resistant to infection.

Petralanda *et al*²⁴ reported that a serum from breast milk of women with Onchocerciasis contains heat labile antigenic products of filarial parasites. This could lead to transmission of Onchocerciasis to the offspring. Onchocerciasis in pregnancy may likely affect immune responses to *Tetanus Toxin* vaccination and birth weight of children. Increased resistance in women could also influence the risk of transmission of infection from mother to child in highly endemic areas. Amazigo²⁵ reported that Onchocerciasis was believed to reduce Reproductive rates of women in a rural farming community in Nigeria.

Onchocerciasis has great socio-economic and psychological complications for women by lowering their chances of getting married due to the disfiguring skin lesions. In a study, women expressed greater concern than men about their physical appearances.²⁶ Prior to 1990, the social implication and cultural aspects of Onchocercal skin disease (OSD) had been totally neglected especially where women were concerned. The beauty of the skin is culturally and socially extremely important. OSD is now recognized as a major health problem. It carries with it a severe social stigma compounding the pain and suffering of those infected with the disease.²⁷

Ivermectin is the favored and current drug for the control of Onchocerciasis. It would also be necessary to integrate Ivermectin treatment into maternal and child health care (MCH). Pregnant and lactating women are usually excluded in Ivermectin distribution. They are advised to seek treatment one month after delivery. In areas of high fertility, women may thus be continually excluded from treatment and hence the chance of a better life. Such women may also constitute a reservoir for the disease. Pregnant women in a study by World Health Organization (W.H.O) received treatment.²⁷ No adverse effects were apparent, hence Merck, Sharpe and Company the manufacturers of Ivermectin, has now changed the exclusion criteria for pregnant and lactating mothers.

No immediate negative effects were found in women that inadvertently took the drugs. Utilization

of health services by women is a complex behavior phenomenon affected by factors as availability, distance, and quality of care, social structure, health beliefs and low status of women. The low status among the women studied; characterized by high average parity, full time childcare and domestic responsibilities, no doubt influence their failure to report for treatment. Scarce resource affected women's mobility and treatment seeking behavior. When a woman fails to turn up for a treatment program, she would always have good reasons related to her gender. Health workers treatment of patients has been recognized as a major problem and important reason why people in developing countries prefer self-treatment or seek traditional healers when they are sick.²⁹ Women are really especially vulnerable to poor treatment by health workers. Women will learn from health workers if treated with respect. The low social and economic status and low self-esteem of some women especially in rural areas reinforce their attitude that their health is not a priority. It was recommended that the coverage of women excluded during Ivermectin campaigns could be resolved by adopting community based distribution approach, where community members such as leaders of women's groups ie, traditional birth attendants (TBAs) and community health workers (CHWs) would participate in the treatment program.

Lymphatic filariasis

This has been known to be very prevalent among women. There is a social stigma associated with the disease. There is ignorance of cause and treatment, and women are silently bearing the brunt of the disease, which they hide underneath their dressing. Social discrimination and divorce was high among these women in a study, conducted in Africa. Prostitution was usually the after effect of such neglect.¹³ These sets of prostitutes were of the lowest cadre and the high-class prostitutes often refer clients with Sexually Transmitted Disease (STDS) to them.²⁶ Lymphatic filariasis is also a social and economic burden on African communities and women are mostly affected. It could result into immense swelling and growth and strong feelings of shame, fear, embarrassment and suicidal thoughts.

Leishmaniasis

The infection with Leishmaniasis in women depends on species and strains of *Leishmania*. *L. tropica* has a preference for women than *L. donovani*. The genetic background of the woman also has a role to play.³ Leishmaniasis/HIV infection is seen as an emerging disease and this have grave consequences on women and their offspring.²⁹ Women have been traditionally thought to be less frequently infected by cutaneous Leishmaniasis because the disease is generally believed to be found mainly in sylvatic areas, where the infected vector is present.¹⁶ Consequently, Leishmaniasis was viewed only as an occupational hazard mainly for men owing to the rural nature of their work. According to Velez *et al*,³⁰ in a study, a similar proportion of infection was reported for both

sexes as opposed to the preponderance of males generally reported, even with Montenegro skin test. The prevalence rates between males and female were similar.

In some foci, women suffer from Leishmaniasis than men and have less access to health care services. Research has now revealed that women also suffer as much as men but report to the health centers less. This is disastrous because a silent enduring of the suffering leads to deterioration in quality of life, given the chronicity of the lesions. Disfiguring scars on women's faces leads to social stigma and inability to get marry.

Women's treatment for cutaneous Leishmaniasis in 1995/96 in Tunisia, Colombia and Costa Rica, where coffee plantation poses an occupational risk as an agricultural main stay of the economy was investigated. Women who lack access to proper treatment of cutaneous Leishmaniasis suffered physical effects (pain and secondary infections and aesthetic effects (scars that impair their social relations). Men reject partners with Leishmaniasis, because they fear catching the disease, women tend to rely more on self treatment or seek traditional cures, using plant ointments, very hot baths with salt or wax and acid burning. The disease becomes more advanced as they go for treatment at the clinics usually as a last resort. In the case of visceral Leishmaniasis, there is problem of detection in females. This is a serious problem that affects infected girls who are not diagnosed, so do not receive treatment. This implies a large loss in years of life, considerable human suffering and a high cost for the country.³⁰

The women stay at home looking after the house and if the condition is not permanently incapacitating, consults a traditional healer in her village about her lesions or applies medicines that her husband brings her from the pharmacy. To her, going to the health center demands several hours and sometimes a day, more so after diagnosis, treatment consist of injections which last 20 days. Men seek to cure themselves with a lot of money and make numerous trips to health centers in towns. Women, who are not as rich, cannot make these expenditures. They cannot be replaced in their domestic labor, nor will men undertake this expenditure for the health of women.

Women with ulcers and scares on the face considered themselves less attractive. Their prospects for marriage are diminished and their capacity to retain a man lowered. This disfigurement could also lead to possible impairment in the long term and affect women's social relation, status and socio-economic mobility.¹³

In treatment seeking, women appear to try more kinds of treatment than do men, no gender difference were observed in the length of time between the development of lesions and seeking treatment. It was concluded that women consult official services less and are under represented in the assessment of the disease and there is always a false estimation of the number of cases by sex. Inequalities

in access to treatment for women have to be corrected and ensuring that community education includes an emphasis on Leishmaniasis and the fact that it is not disease that affects only Men.

Women who lack access to proper treatment of cutaneous Leishmaniasis would suffer physical, aesthetic and much social effects as well. The lesions will also diminish the working capacity of women with consequences for their mental being, children and household chores. Women affected by Leishmaniasis would express suffering and seek a cure for the disease through self-treatment and visits to local healers.³⁰

Guinea worm

Guinea worm causes women to be sedentary. Women are forced to concentrate on more sedentary jobs leaving food crops unharvested. The hallmark of the disease is crippling incapacitation whose seasonal occurrence coincides with planting and harvesting seasons resulting in loss or great reduction in agricultural output. Women's role in agriculture is greatly hampered. Their agricultural roles as harvesters are stopped. Brieger *et al*³¹ reported that women lose as much as US\$70 yearly in Nigeria, at guinea worm illness.

The impact of guinea worm disease on women is profound. The inability of the infected mother to continue to work and care for her own personal and child's need has far reaching consequences. She is unable to work and earn money for adequate feeding so under nutrition and malnutrition sets in for both mother and child. This results in weight loss for both. She is unable to meet the husband's sexual needs. The husband may seek attention elsewhere outside the matrimonial home, thereby threatening the stability of family life. The continued support of the husband especially at a time like this, when her disability makes her more dependent is threatened.³²

Hookworm

Women exhibit higher rates of hookworm morbidity because they suffer compromised iron balance needing more iron than men do. They are therefore predisposed to iron deficiency anemia by hookworm. Pregnancy and breast-feeding are aggravated by hookworm morbidity that causes abortion, stillbirths and miscarriages, thereby causing psychological and emotional stress.¹⁰

Hookworm also has economic impact on women who show a disinclination and inability to work and productivity is undermined. Poverty and ignorance are two important epidemiological factors in hookworm disease and women are most affected. They are the gender that is more ignorant about nutritional factor and the very group that cannot afford to raise their nutritional levels especially with regards to iron content.³²

Trypanosomiasis

In rural areas, the cost of treating sleeping sickness is high; they include drugs, user fees and long

hospitalization. Women rely on their husbands to provide funds for treatment and so they often seek for treatment at a late stage of the diseases if at all.⁸

Women also fear lumbar puncture taken for diagnosis as rendering one permanently weak with chronic back pain and been rendered unfit for marriage as men cannot tolerate weak women, hence women may not find husbands or divorce on this ground.¹³ The belief that Trypanosomiasis is closely linked to STDs especially Acquired Immune Deficiency Syndrome (AIDS) and that they are being perpetuated by women exist. This is in fact called women's diseases in some places. This makes women suffering from Trypanosomiasis to avoid seeking treatment. They fear the shame, stigma and ostracization. In certain parts of Cameroon, women with Trypanosomiasis receive scarifications on their bodies when they visit Traditional healers. The ugliness of these scars puts off potential male suitors. Bucksbaum *et al*³³ reported that swollen glands in the neck are also symptoms of Trypanosomiasis and this adds to the social stigma. Much of the laziness attributed to women in some Trypanosomiasis areas is no doubt due to this disease. *Trypanosoma cruzi* the causative agent of Chagas disease infects 10 – 18 million people in America, half of who are women who eventually transmit it to their newborns.³⁴

Conclusions and Recommendations

There should be increased awareness and understanding of the importance of gender in determining health outcomes and the crucial role that women play in health care within families and the wider society. In addressing women's health needs, reports of women, development and health projects emphasizes the importance of training women as health workers, skilled community workers, formal health educators and peer group educators in ways that fit in with local, cultural, social and economic factors. This would meet the need for a greater number of health workers in a variety of fields.

Community participation development projects need to be designed to include women and their interest and to consider the ways in which such projects will affect and be affected by issues of gender. Women's effective access to health care involves the interrelationship of many complex factors. This can only be assured if services are considered available, affordable, appropriate and acceptable by women.

Access to information and knowledge are also key issues in women's access to health care. One of the reasons for the lack of success of health projects is failure to understand women's normal patterns of time and use in the community and to accommodate for this in planning. Women's work within and outside the home, and in pregnancy and lactation, both reflects women's status and has a direct impact on their health.

The gender concepts help to explain the differential treatment of male and female.

Discrimination against females was found to start from birth and continue throughout life to the extent that infanticide, early marriages and slavery are directed at the female children. Women themselves are not innocent of this and can correct these themselves. To eradicate this, mothers should be educated to stop showing preferential treatment to their male children right from birth. They should bring up female child as also important so that they would build up high esteem as a woman.

More female health workers are needed especially in the rural areas where women are in 'purdah', only female health workers can have access to such women. These women are inhibited from showing body parts, to sharing intimate problems with the opposite sex. The social and economic conditions of women's lives affect their children in a complex process of interaction and for this reason it is necessary to look in more detail at the precise interaction.

The effect of Tropical disease on women shows a vivid picture, it is therefore high time to begin to portray and measure women's health in a way, which actually considers women's health for its own sake.

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