

A New Village Movement towards Abatement of Malaria Epidemics in Sub-Saharan Africa: A Policy Design For Experimentation: Uganda

Okwir Martin¹

Professor Lee Yongs²

Michell Anthony³

Professor Shin, Jaeun⁴

¹Correspondent Author, KDI School of Public Policy and Management, South Korea

²KDI School of Public Policy and Management, South Korea

³KDI School of Public Policy and Management, South Korea

⁴KDI School of Public Policy and Management, South Korea

Abstract

The Nations in Sub-Saharan Africa, including Uganda, have been suffering from malaria epidemics from time immemorial. Not only have the malaria epidemics been claiming countless lives but it also has been depressing labor productivity. To deal with this devastating epidemic the modern Ugandan government and International Organizations have been mobilizing the government agencies to fight malaria. These efforts, however, have not been successful as policymakers expected. The present study proposes an alternative approach to malaria abatement which empowers the villagers themselves to fight malaria. The hypothesis is that if the villagers are properly motivated to fight for their own health and life, they will eradicate malaria epidemic more effectively and efficiently. The idea of local empowerment is a concept that has been successfully utilized in South Korea during her developmental stage in the 1970s to modernize the agricultural communities. The present study borrows key concepts from South Korea's "New Village Movement" and applies them to local efforts in Uganda. The purpose of this study was to take the first step to examine the feasibility of such an approach. It develops a policy design at the village level and examines the necessary costs and benefits in comparison to the top-down approach. To achieve the study objectives, a desk review approach was adopted where data and the required information was obtained from studies and publications by World Bank, World Health Organizations and government sources. The study concludes that the current policy framework to fight malaria in Uganda has failed to achieve expected results in addition to it being expensive. The study concludes that a community based approach like that applied in South Korea ought to be adopted so as to achieve multiple objectives of fighting malaria, poverty reduction and accelerated economic growth. The approach is cost effective and requires running for a certain period of time.

Background

In Uganda and elsewhere in the world, malaria continue to present huge burden upon the health and economic development and is major obstacle to achieving health-related Millennium Development Goals currently referred to as Sustainable Development Goal.¹ Malaria leads to widespread premature death, suffering and also imposes financial hardship to the poor households;² leads to retardant economic growth and undermines the living standards of every community.³ The majority of the world's malaria burden is in Sub-Saharan Africa (SSA). Here,

¹ Department of Community Health, Ministry of Health, Box 7272, Kampala, Uganda.

² Audibert M, Mathonnat J, Henry MC, (2003) *Trop Med Int Health*. Malaria and property accumulation in rice production systems in the savannah zone of Cote d'Ivoire. pp, **8** (5):471-483.

³ Ministry of Health, "Uganda Malaria Control Policy," 2000.

the disease is responsible directly to deaths of one in every five children and indirectly contributing to a “sizeable proportion of childhood morbidity and mortality resulting from additional illnesses such as diarrhea diseases, iron-deficiency anemia and malnutrition”.⁴ Cases of malaria reported in Uganda every year approximate 8.2 million which is quite high considering total population of the country appropriate to thirty (30) million people. In Uganda, malaria is responsible for deaths approximating 72 children below the age of five on a daily basis. Treatment costs for farming household in rural Uganda approximate 7% of household consumption excluding prevention costs hence indicating the high economic burden of malaria.⁵ Malaria risk and disease burden remains to be less equitably distributed across the globe and regions and also across house households. The inequity among the households in majorly out differing housing standards, lack of education among the households and healthcare services access. This inequity creates a vicious cycle of vulnerability to malaria. Contributors to the malaria risk and burden vicious cycle include high exposure to malaria, high malaria medication costs and inability to pay for malaria treatment. The decisions concerning prevention and treatment of malaria depend households’ perceived susceptibility and assessment of consequences. Additionally, malaria transmission risk is increased due to environmental degradation, lack or poor drainage and failure to clear vegetation to prevent development of *Anopheles gambiae* which happens in sunlit areas, water bodies and artificial residential premises associated with human dwelling.

Poverty is closely related to the instances of malaria and also environmental change in majority of African nations where malaria epidemic is catastrophic. This has greatly hampered successful fight against malaria since malaria cannot be fought without fighting or mitigating poverty. However, active participation and involvement of all communities and men and women of all ages has been recognized as key factors for success in fighting malaria in poverty stricken countries.⁶ This notwithstanding, malaria remains a common endemic in majorly of rural communities of Sub Saharan Africa⁷ and joint efforts and new initiatives ought to be put in place to accelerate sustainable fight against the epidemic.

Historically, malaria has been viewed only as a biomedical capable of being treated by antibiotics. However, the cost of the treatment and medication is always high and the target populations by such programs being very wide. This then creates queries on sustainability of the programs in place to fight malaria and the role that communities can play by changing their behavior, improving their economic status through active participation. Kroeger *et al* (1996) argue that “successful disease control at the community level needs to take the human behaviour, sociocultural and economic context into account in order to successfully impact the disease through active participation and changing of risk behaviours” (p. 1). Numerous challenges faced

⁴ National Malaria Control Programme, Ministry of Health, Uganda Malaria Research Centre, and Malaria Consortium, “Assessing the availability of the first and second line antimalarials in selected health facilities in Uganda,” 2007.

⁵ A. W. Holly, D. Durrheim, and R. Shretta, (2004) “The process of changing national malaria treatment policy: lessons from country-level studies,” *Health Policy and Planning*, vol. 19, no. 6, pp. 356–370.

⁶ Lindsay SW, Birley M: *Ecohealth*, (2004) Rural development and malaria control in sub-Saharan Africa.

⁷ Roll Back Malaria Partnership, “Global Malaria Action Plan,” 2008, <http://www.rollbackmalaria.org/gmap/0-5.html>.

in the current vertical, top-down approach to malaria eradication, have generated the discussion on need to emphasize on community-based malaria fighting strategies.⁸

The use of community based malaria strategies does not imply that the strategies constitutes to total success on fight against malaria. Challenges have been noted in running the programs where there exists a lot of empirical and theoretical evidence where such approaches have recorded success due to good relationship between the community and programme staff⁹ and not merely as a result of the approach. Key community based initiatives the generation of a feeling of empowerment, local ownership and responsibility and the application of action-oriented and participatory approaches. Community based interventions are usually evaluated on periods of three to five years in order to establish and evaluate the success of the interventions since the expected results of attitude modification and behaviour takes years to accomplish. Various examples of successful community based programmes are numerous including the control of dengue, urinary schistosomiasis, dracunculiasis and onchocerciasis. Kaseje and, Spencer (1987) observed that “in Africa, few of the projects have been truly 'bottom up' community initiated like the Saradidi Rural Health Development Programme, Kenya and Uganda, but the term is widely used to refer to community co-operation or acceptance of schemes introduced through health education from outside and reflecting national priorities and targets”.¹⁰

Majority of community based programs focus on the improvement of treatment-seeking behaviour, improving access to prompt malaria diagnosis and treatment. This is done by having community training programs through which community health workers and shop keepers distribute insecticide treated nets (ITNs). However, this approach has not achieved much success with only few projects showing success of community-led vector control whose results goes beyond individual malaria protection measures for example environmental modifications and larviciding.¹¹

Available literature indicates that the success and sustainability of community based malaria control programmes depends on community consideration that malaria epidemic is a major problem to the prosperity of the community as a whole and the community have necessary knowledge and skills to be a part of the program and participate fully in malaria prevention and programme evaluation.

This study first sought to determine the nature and extent of the problem in Uganda, the economic situation of Uganda in terms of the income levels and demographic factors like population, level of urbanization, the extent malaria was expected to affect the local population. In order to do this, data was gathered from secondary sources which included government of Uganda publications, economic status data as published by the World Bank among other published articles. Further, the study also analyzed the approach adopted in South Korea termed in this study as “a new movement towards malaria abatement”, how it was carried out, the

⁸ Kroeger A, Meyer R, Mancheno M, Gonzalez M: (1996) *Trop Med Int Health*. **Health education for community-based malaria control: an intervention study in Ecuador, Colombia and Nicaragua**. Pp, 1 (6):836-846.

⁹ Kroeger A, Meyer R, Mancheno M, Gonzalez M. (1996). Health education for community-based malaria control: an intervention study in Ecuador, Colombia and Nicaragua, *Trop Med Int Health*. 1:836–846

¹⁰ Kaseje DC, Spencer HC, (1987) The Saradidi, Kenya, rural health development programme. *Ann Trop Med Parasitol*, 81 Suppl 1:1-12

¹¹ Okanurak K, Sornmani S,(1996) Community participation in the malaria control program in Thailand: a review. *Southeast Asian J Trop Med Public Health*, 23 Suppl 1:36-43

resources required, the costs and the benefits. Information relating to this data was gathered from publications available and studies done. The study then went ahead to determine the expected benefits versus the costs of the proposed community based program and the cost of the program currently applied in Uganda.

Aim of the Study

General Objective

The purpose of the study was to develop a policy design and examine its feasibility on malaria abatement in Uganda comparing with the current policy design costs and expected benefits of the proposed framework.

Specific Objectives of the Study

The specific objectives of the study included:

- To evaluate the impact and burden of malaria on the community and on the economic growth in Uganda;
- To examine the extent of malaria abatement and key factors contributing to government inability to effectively control the disease burden in East Africa.
- To Assess the Successful implementation of the South Korean Semaul Undong Movement initiatives as a viable lessons for Uganda in Malaria Eradication.

Research questions

1. How feasible is the proposed new village movement approach in abatement of malaria epidemics in Sub-Saharan Africa?
2. What is the impact and burden of malaria on the community and on the economic growth?
3. What are the success lessons that Uganda can borrow on success of South Korean Semaul Undong Movement initiatives in Malaria Eradication.

Problem Statement

Malaria remains to be a major public health challenge in developing nations and Uganda not been excluded. This is irrespective of various continued efforts by governments in developing nations. Consequently, the epidemic has continued to present huge burden to the countries (Dugbartey et al., 1998; Asante and Asenso- Okyere, 2003). National Malaria Control Programme (NMCP) Annual Report (2008) estimated that 3.1 to 3.5 million cases had clinical malaria representing 44% outpatient illnesses reported in public health facilities annually. Notably, malaria in Uganda explains about 36% of hospital admissions and 22% of all deaths among under age children below five years annually. In 2000 and 2007, children death among the underage population from malaria was a fifth or a quarter the percentage number of deaths in Uganda (National Malaria Control Programme (NMCP) Annual Report, 2008; Owusu-Agyei et al. 2007).

Empirical evidence from Uganda and other parts of SSA have found that malaria cases remains to be hardly reported with only 1 in 4 cases or 1 to 5 cases have been reported. This is due to the fact that majority of the cases are treated at home and do not go to the hospital for treatment (Bremam et al. 2004; Buabeng et al. 2007). This means that the malaria situation may be worse than what is available in literature.

It has also been noted that malaria is both a health problem and developmental problem in most of the developing nation implying the need for policy adoption in fight against malaria. Consequently, dealing with malaria epidemic may require huge investment and hence placing financial burdens on both households and the economy (Asante and Asenso-Okyere, 2003).

From the study Asenso-Okyere (2003), it was found that a single episode of malaria in a household resulted in an estimated average cost of almost 134, 000 old Uganda cedis (US\$ 15.79).

With regards to economic impact on the country as a whole, malaria leads to Gross Domestic Product (GDP) loss of 1-2 per cent annually (World Malaria report 2003; World Health Organisation, 2005). In further support of this fact, Ministry of Health in Uganda in 2008 estimated that the annual economic cost of malaria was US\$772.4 million dollars. Notable, Uganda has a GDP of US\$59.4 billion dollars representing US\$32.65 dollars per person (MOH 2008). From the macroeconomic perspective, it has also been found that a percentage increase in malaria morbidity rate, slows real GDP growth by 0.41% (Asante and Asenso-Okyere, 2003).

Problems caused by malaria continue to raise main concerns within nongovernmental and governmental organizations in Uganda and elsewhere in developing world concerning the policy strategy capable to determine the future direction of malaria control. It is widely accepted that been accepted past conventional (top-down) approach to malaria control has terribly failed in achieving the target results of malaria eradication at lowest cost and sustainability (Shiff, 2004; Breman *et al.*, 2004). Consequently, there has been growing recognition that in order to address the complexities of malaria management and control which is sustainable and more effective, a gradual adoption of more participatory, consultative and systematic approach is require (WHO, 2002).

Donors and multilateral organizations since 2000 have consequently provided widened assistance in form of funding to the government of Uganda beef up the efforts to control malaria. The outcomes of these continued efforts is adoption of the policy of Inter-Sectoral Collaboration (ISC), a system meant to address malaria epidemic systematically and holistically (Shiff, 2002; Baird, 2000). However, recent findings continue to indicate that malaria problem remains key challenge irrespective of the much resources allocated to the program from the government and donors. However, hope on sustainable fight against malaria lies on adoption of a policy framework which to greater extent, relies increased participation of the local people (Dunn 2005).

There is however limited literature on how communities in Uganda can respond to new approach of empowering them to fight the menace (Chaki et al. 2011). Additionally, an alternative approach that can be used to fight malaria is yet to be proposed irrespective of the fact that fight against malaria remains unsustainable and very expensive. This study therefore sought to propose an alternative policy to fighting malaria which is affordable and sustainable. The study examined the demographics in Uganda, the cost of the current policy framework and explored the expected benefits by adopting proposed framework which involves community empowerment to enable them fight poverty and malaria.

Research Design

A research design is a scheme, outline or plan that is used to generate answers to various research problems. This study adopted descriptive research design. Descriptive research enabled the researcher to describe the proposed policy method for malaria abatement. It also enabled description of the idea of local empowerment as a concept that had been successfully utilized in South Korea during her developmental stage. Due to the cost implication, a desk research approach was adopted where information was gathered from previous studies and other publications.

Data Collection

This study was a purely desktop study which attempted to describe the proposed policy framework for malaria abatement in Uganda. To achieve the study objectives, data was collected from various publications relating to malaria situation in Sub-Saharan Africa, community empowerment program in South Korea and all other relevant information. Data was mainly gathered from World Bank, World Health Organization and Uganda government publications.

Data Analysis

Data analysis involved reducing accumulated data into manageable size, developing summaries, looking for patterns and applying statistical techniques such as bar charts and tables. Comparisons were done and estimations applied to determine the expected cost of the proposed new movement. Trend figures provided important information on the expected trends in population and economic performance.

Summary and Discussion

Like any other Sub Saharan Africa country, Uganda has majority of the population living in rural areas. Rural population is characterized by low income and hence malaria prevalence rate remains high. While the percentage of rural population to total population in Uganda has been declining, rural population has upward trend in absolute numbers indicating that the burden of fighting malaria will increase over the years as the rural population grows.

Uganda has the third highest number of deaths from malaria in Africa, and some of the highest reported malaria transmission rates in the world. Malaria accounts for 30%-50% of outpatient visits and 15%-20% of hospital admissions with stable, perennial malaria transmission in 90-95% of the country. In the rest of the country, particularly in the highland areas, there is low and unstable transmission with potential for epidemics.

Uganda has a policy named the “President’s malaria initiative” to control malaria by distributing insecticide treated nets and spraying of insecticides in homes. In 2015, the initiative had a budget of \$ 28,232,500 (Uganda Shilling 95.14 billion) to be used to procure insecticide-treated nets and insecticides. While the government can have much efforts to manage malaria through issue of procure insecticide-treated nets, the use of the same by citizens cannot be guaranteed. This is irrespective of the high cost of the policy which may become unsustainable. This necessitates a new policy initiative which is cost effective, capable of long run fight of malaria, and achieves additional benefits apart from abatement of malaria. This study therefore sought to borrow from South Korea’s Semaui Undong Movement and propose a related policy framework of empowering communities to fight malaria by themselves.

Malaria has significant impact and burden on the community and economic growth. When malaria morbidity increases by one unit, holding all other variables constant, per capita GDP decreases by US\$0.00767 per year. With total GDP of Uganda Shillings (US\$) 12,756,500 million in 2003, the reduction in per capita GDP due to malaria translates into a total of US\$ 97 Billion. The reduction in GDP takes a variety of forms such as: reduced labour performance and school attendance reduced household ability to save and invest, and modification of household economic decisions in response to the risk of contracting malaria, increased government expenditures on control and treatment of the disease.

The President’s Malaria Initiative (2015) identified various factors leading to government’s inability to fight malaria. The challenges include vector resistance to insecticide due to failure to take correct medication, low uptake of malaria programs among population due to misconception

and beliefs, poor malaria case management and delayed, low position of malaria committee under ministry of health, inadequate staffing, inadequate funding and security challenged in neighbouring countries.

The President's Malaria Initiative (2015) was adopted in Uganda in 2006 and aims at ensuring that 80% of the Uganda population consistently uses at least one malaria intervention. This includes achieving and sustaining universal net coverage, which is defined as one net per two people, and a strong, multi-pronged behaviour change communication approach to increase usage. For year 2015, the initiative had a budget of \$ 28,232,500 (Uganda Shilling 95.14 billion) to be used to procure insecticide-treated nets and long lasting insecticide.

Notably the current policy adopted by the Ugandan government has huge annual budget with main concern being on control of malaria by distribution of treated mosquito nets and insecticide for subsequent net treatment. Notably, distribution on mosquito nets is very expensive and distribution through schools and antenatal clinics cannot reach the entire population. With increase in population, the cost of malaria management will increase significantly.

To address this concern, a new village movement towards abatement of malaria epidemics in Sub-Saharan Africa is proposed borrowing from Saemaul Undong initiative. Saemaul Undong (SU) was development oriented program targeting communities in Republic of South Korea in 1970s. The major aim of the initiative was to overcome endemic rural poverty in the country and consequently eliminate other social problems facing the population in the country. The movement embraced four major government-defined objectives that were to lead to a better quality of life in rural areas: modernizing infrastructure, raising household incomes, reforesting mountains, and improving the overall rural environment. In order to fulfil these four objectives, the movement formulated a series of projects that would support their fulfilment.

The proposed policy supports the change of community mindset in fight against malaria. Borrowing from the Saemaul Undong initiative, the movement built a national confidence infused with a "can-do" spirit that transformed the former national mindset of chronic defeatism into new hope, a shared vision of a better life for all, and an infectious enthusiasm propelled by volunteerism at the community level.

If the proposed model is adopted, it is expected to positively impact individual and community well-being, enriched the social capital of community members, accelerate economic growth in addition to fight against malaria. The adoption of the policy will reduce cost of malaria control since the communities will do it themselves and also increase communities' income. The cost of the policy initiative is expected to be Uganda Shillings 102 Billion (\$28 Million) per year for five years with the cost expected to reduce over the years.

Recommendations

Malaria epidemic remain a key challenge to the governments in Sub-Saharan Africa including Uganda. Like other Sub-Saharan African country, Uganda adopted the President's Initiative in 2006 to procure and distribute free insecticide treated nets and insecticides. While the governments in Uganda and Sub Saharan Africa can do much to distribute free ITNs, the governments cannot enforce their use. Therefore, this study recommends a new village movement approach towards abatement of malaria epidemics in Sub-Saharan Africa for experimentation in Uganda. The approach will not only fight malaria but also save on cost, improve community wellbeing and achieve accelerated economic growth.

The proposed policy framework calls for participatory approach to fight malaria and achieve economic development. The governments in Sub Saharan Africa ought to empower their citizen to fight malaria by themselves. Borrowing from South Korea's, Semaul Undong movement benefited from failed government programs in the 1960s which relied on compulsory participation. The SU movement in the 1970s, however, could encourage voluntary participation by awakening in the rural population the Saemaul spirit of diligence, self-help, and cooperation. Hence, participation in fight against malaria must be voluntary with a sense of belonging to the movement being instilled on people.

The proposed policy initiative recommends for reorganization of the administrative structures to ensure service oriented village elders drive the initiative at grass root level. In Semaul Undong movement, the primary contact the government had with villagers was through officers of the local *myon* or *gun*. These officers advised and consulted with villagers, particularly the Saemaul leaders, on matters relating to administrative guidance and technology. These local administrative officials likewise actively participated in meetings of the Saemaul promotional councils at the town and county levels.

The study proposes that Uganda to ensure adequate funding on the new policy initiative to hence support the success of the initiative. While this study propose an approximately allocation of Uganda Shilling 102 Billion (\$28 Million), the actual amount is likely to increase over time just like the case with Semaul Undong initiative. Government commintment will be critical for the success of the initiative just like case of South Korea.

Conclusions

The general purpose of the study was to develop a policy design and examine its feasibility with some estimated costs and benefits with possible experimentation in Uganda. To achieve this, the study borrowed from South Korea's Semaul Undong community movement. Therefore, the study concludes that malaria epidemic remains a key challenge to the governments in Sub-Saharan Africa including Uganda. The epidemic has huge impact on communities in Uganda and slow economic growth. With increase in rural population and rural-urban migration, malaria will continue to erode resources and slow economic growth. The solution to this is the policy design closely related to South Korea Semaul Undong initiative which is effective in fighting malaria, cost effective and capable of achieving multiple goals of improving community welfare and achieving economic growth.

The study also sought to evaluate the impact and burden of malaria on the community and on the economic growth. The study concludes that malaria has significant cost on effect on economic growth with substantial reduction in economic growth due to malaria. Malaria epidemic remain to cost communities substantial part of their income in addition to reduced earnings due to ill health related to malaria. The reduction in GDP could take a variety of forms such as: reduced labour performance and school attendance, reduced household ability to save and invest, and modification of household economic decisions in response to the risk of contracting malaria, increased government expenditures on control and treatment of the disease.

The study also sought to examine the extent of malaria abatement and key factors contributing to government inability to effectively control the disease burden in Uganda. The study concludes that various challenges hindering malaria control include vector resistance to insecticide due to failure to take correct medication, low uptake of malaria programs among population due to misconception and beliefs, poor malaria case management and delayed, low position of malaria

committee under ministry of health, inadequate staffing, inadequate funding and security challenged in neighbouring countries.

The study also sought to assess the successful implementation of the South Korean Semaul Undong movement initiatives as viable lessons for Uganda in malaria eradication. The study concludes that Semaul Undong community initiative was a big success and offers many lessons for Uganda and Sub-Saharan Africa in fight against malaria and accelerated economic growth. The initiative remains responsible for the fast economic growth in South Korea. By adoption of the proposed community initiative, in addition to fight against malaria, the community will also benefit from poverty reduction through rapid increases in household income; access to modern infrastructure and services, delivered in the form of mechanized farming, electrification, improvement of residential, housing, and health services, the latter, including farming; community empowerment through amassing of social capital and concomitant growth in civil society; community revitalization through younger leadership and promulgation of status-free village social life; and elevation of the role of women through increased female social participation and advancement of women in the role of household management.

References

- Alilio, M., Kitua, A., Njunwa, K., Medina, M., Ronn, A., Mhina, J. (2004). Malaria control at the district level in Africa: The case of the Muheza district in North-eastern Tanzania. *The American Journal of Tropical Medicine and Hygiene*, 71 (2), 205-213.
- Asian Development Bank (2012). *The Saemaul Undong Movement in the Republic of Korea: Sharing knowledge on community-driven development*. Mandaluyong City, Philippines.
- Barat, L., Palmer, N., Basu, S., Worrall, E., Hanson, K., & Mills, A. (2004). Do malaria control interventions reach the poor?. A view through the equity lens. *The American Journal of Tropical Medicine and Hygiene*, 71(2), 174-178.
- Chirdan, O., Zoakah, A., & Ejembi, C. (2008). Impact of health education on home treatment and prevention of malaria in Injengre, North Central Nigeria. *Annals of African Medicine*, 7(3), 112-119.
- Clements, C., Streefland, P & Malu, C. (2007). Supervision in Primary Health Care: Can it be carried out effectively in developing countries? *Current Drug Safety*, 2, 19-23.
- Cohen, L., Manison, L., & Morrison, K. (Eds.). (2007). *Research methods in education* (6th ed.). London: Routledge Taylor & Francis.
- Denehy, J. (2001). Health education: An important role for School Nurses. *The Journal of School Nursing*, 7(5), 233-238.
- Deressa, W., Ali, A., & Enquoselassie, F. (1999). Knowledge, attitudes and practices about malaria, the mosquito and antimalarial drugs in a rural community. *Ethiopia Journal Health Development*, 17(2), 99-104.
- Fitzpatrick, J., & Ako, W. (2007). Empowering the intuition of a prevention strategy to combat malaria. *The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy*, 7(693), 1-9.
- Goh, Kun. (2010). *Saemaul Undong in Korea: factors of success and their transferability*. Keynote speech presented at the International Symposium in Commemoration of the 40th Anniversary of the SU Movement. Seoul.
- Green, L., & Kreuter, M. (2005). *Health program planning: An educational and ecological approach*, (4th ed.). Retrieved 10th May 2015, from <http://www.lgreen.net/precede.htm>.
- Health Promotion and Education Directors, (2008). Malaria. Retrieved 2nd May 2015, from <http://www.dhpe.org/infect/Malaria.html>.
- Heggenhougen, H., Hackethal, V & Vivek, P., & Spielman, A. (2003). The behavioural and social aspects of malaria and its control: An introduction and annotated bibliography. Geneva: World Health Organization.
- Hii, J., Dyke, T., Dagoro, H., & Sanders, R. C. (1997). Health impact assessments of malaria and Ross River virus infection in the Southern Highlands Province of Papua New Guinea. *PNG Medical Journal*, 40(1) 14-25.
- Kaneko, A., Taleob, G., Kalkoab, M., Yamar, S, Kobayakawa, T & Björkman, A. (2000). Malaria eradication on islands. . *The Lancet*, 356(9241), 1560-1564.

- Kegler M.C., Norton B.L. & Aronson R. (2008b) Strengthening community leadership: evaluation findings from the California healthy cities and communities program. *Health Promotion Practice* 9 (2), 170–179.
- Keiser, J., Caldas de Castro, M., Maltese, M., Bos, R., Tanner, M., Singer, B.H., Utzinger, J. (2005) Effect of irrigation and large dams on the burden of malaria on a global and regional scale. *American Journal of Tropical Medicine and Hygiene* 72: 392-406.
- Kelly-Hope L, Ranson H, Hemingway J (2008) Lessons from the past: managing insecticide resistance in malaria control and eradication programmes. *Lancet Infect Dis* 8(6): 387–389.
- Kengeya- Kayondo JF, Seeley JA, Kajura-Bajenja E. (1994) Recognition, treatment seeking behaviour and perceptions of the cause of malaria among rural women in Uganda. *Acta Tropica* 58, 267–273.
- Kickbusch, I. (1989). Self-care in health promotion. *Social Science and Medicine*, 29(2), 125-130.
- Kickbusch, I. (1999) Global-local; Glocal public health, *Journal of Epidemiology and Community Health*, 53, 451–452
- Kidane G & Morrow RH (2000) Teaching mothers to provide home treatment of malaria in Tigray, Ethiopia: a randomized trial. *The Lancet*, 356:550–555.
- Kilpatrick S (2009) Multi-level rural community engagement in healthThe *Australian Journal of Rural Health* 17, 39-44
- King, L., Hawe, P. and Wise, M. (1998), Making dissemination a two-way process. *Health Promotion International*, 13, 237-244
- Kingdon JW. (1984) *Agendas, alternatives and public policies*, Boston, MA and Toronto: Little, Brown and Company.
- Kingsley, G. T., J. B. McNeely, and J. O. Gibson (1997), *Community building: Coming of age*. Washington, DC: The Development Training Institute, Inc and the Urban Institute.
- Klein, R. (1984) The politics of participation. In R. Maxwell & N. Weaver (eds.) *Public Participation in Health*, London: King Edward’s Hospital Fund, pp. 17–32.
- Klinkenberg E, McCall PJ, Hastings IM (2005) High malaria prevalence and urban agriculture in Accra, Ghana. *Emerging Infectious Diseases* 11, 1290–1293.
- Klugman B (2004) *Accountability and Participation in Africa*. Women’s Health Project: Johannesburg.
- Konadu, K (2008) "Medicine and Anthropology in Twentieth Century Africa: Akan Medicine and Encounters with (Medical) Anthropology," *African Studies Quarterly* 10, nos. 2 & 3.
- Korenromp EL, Williams BG, Gouws E, Dye C, Snow RW (2003). Measuring trends in childhood malaria mortality in Africa: a new assessment of progress toward targets based on verbal autopsy *Lancet Infectious Diseases*, 3: 349-358
- Kreisel, W. (1998), *Intersectoral Action for Health: A cornerstone for health for all in the 21st century*, World Health Organisation.
- Labonte, R., & Laverack, G. (2008). *Health promotion in action: From local to global empowerment*. Hampshire: Palgrave Macmillan.
- Lilley, S. (1993) *Making it work! Community participation in health planning in Nova Scotia*, Discussion paper for the Strengthening Health Partnership of Nova Scotia Nova Scotia: Dalhousie University
- Lindsay, S.W.; Egwang, T.G.; Kabuye, F; Mutambo, T & Matwale G.K (2004) Activity Report 140 Community-based Environmental Management Programme for Malaria Control in Kampala and Jinja, Uganda Final Report.
- Litva, A., Coast, J., Donovan, J., Shepherd, J.T., Abelson, J & Morgan, K, (2002) 'The public is too subjective': public involvement at different levels of health-care decision making. *Social Science and Medicine*, 54: p. 1825-1837.
- Love, A. J. (1991). *Internal evaluation: building organizations from within*. Newbury Park: Sage Publications
- Luxemburger, C., McGready, R., Kham, A., Morison, L., Cho T., & Chongsuphajaisiddhi, T. (2001). Effects of malaria during pregnancy on infant mortality in an area of low malaria transmission *American Journal of Epidemiology* 154 (5), 459-465.
- Lynch, J., Due, P., Muntaner, C., and Davey-Smith, G. (2000), “Social capital – is it a good investment strategy for public health?” *Journal of Epidemiology and Community Health*, vol. 54, p. 404-408.
- Marsland, R. (2006). ‘Community participation the Tanzanian way: Conceptual contiguity of power struggle?’ *Oxford Development Studies* 34(1): 65-79.
- McMurray, A. (1999). *Community health and wellness: A socioecological approach*. Sydney: Harcourt Mosby.
-

- Ministry of Home Affairs (1980). 10-year history of Saemaul Undong movement. Seoul.
- Okech, B., Mwoboia, I., Kamon, A., Muiriri., S, Mutiso, N., Nyambura, J.,. (2008). *Use of Integrated Malaria Management Reduces Malaria in Kenya*. PLOS ONE. Retrieved 5th June 2015, from <http://www.plosone.org/article/info:journal>.
- Orem, J., Muthuri, J., Azairwe, R., Kasirye, I. and Walker, O., (2012). *Impact of malaria morbidity on gross domestic product in Uganda*. International Archives of Medicine, 5:12
- President's Malaria Initiative (2015). *Uganda Malaria Operational Plan FY 2015*. USAID
- World Bank (2015). <http://data.worldbank.org/country/uganda>
- World Health Organization (2013): *World Malaria Report*. Geneva: WHO.
- Yeka A, Gasasira A, Mpimbaza A, Achan J, Nankabirwa J, et al. (2012). *Malaria in Uganda: challenges to control on the long road to elimination: I. Epidemiology and current control efforts*. Acta Trop 121: 184-195.