Background
Malaria in Ghana is the leading cause of workdays lost to illness. Because malaria can be so damaging to the income-generating capabilities of their clients, microfinance institutions (MFIs) are seeking ways to reduce the risk. In response to its West African MFI partners, Freedom from Hunger, with a grant from the GlaxoSmithKline Africa Malaria Partnership, developed a dialogue-based malaria education curriculum to be integrated with the financial services of MFIs. To determine the effectiveness of the malaria education, an impact evaluation was conducted with two rural banks in Ghana that implemented the malaria education with their clients.

Methods
Freedom from Hunger pursued a randomized control trial evaluation of the malaria education to measure changes in knowledge, attitudes and behaviors pertaining to malaria. A baseline and follow-up survey were conducted between October 2004 and April 2006. Malaria education and diarrhea education were randomly assigned at the community level by Brakwa-Breman Rural Bank in Central Region and Afram Rural Bank in Eastern Region. Within those communities were Credit Association members who received malaria education (“malaria clients”) or diarrhea education (“diarrhea clients”) along with access to credit as well as community members (non-clients) who did not receive credit or education. The purpose of this design was to allow for measurement of the added benefit of the malaria education, to account for natural information exchange in a group-lending environment, and to measure for spillovers from malaria clients to community members not participating in credit or education. Survey respondents were women of reproductive age with at least one child under the age of six.

Results
In addition to Freedom from Hunger’s malaria education, there were other malaria initiatives occurring in the program areas during the time of this study. Thus, in many indicators and for all groups studied, there were significant improvements from baseline to follow-up in knowledge and behavior. However, malaria clients consistently improved more than both diarrhea clients and non-clients. The following indicators highlight where malaria clients excelled in relation to the other groups:

- Malaria clients were more likely to recognize that mosquitoes alone cause malaria. They were also more likely to understand the role of the parasite and were able to describe the entire transmission process compared to other groups.
- Malaria clients were more likely to know that both pregnant women and children under the age of five are most vulnerable to malaria.
- Almost 100 percent of malaria clients at follow-up indicated that insecticide-treated nets (ITNs) were the best protection against malaria. Half of malaria clients owned a mosquito net and 11 percent owned an ITN. Malaria clients were more likely to own an ITN.
- Malaria clients were more likely to have women of reproductive age and children under the age of five sleeping under an ITN.
- Malaria clients were twice as likely to have re-treated a mosquito net in a last six months.
• The most common reasons for non-use of mosquito nets were lack of affordability and lack of local availability.

• Almost 90 percent of all malaria clients indicated they shared messages from their malaria education sessions with other members of their community, particularly regarding the role of the mosquito in malaria, the use of ITNs as the best protection, and how to treat a child with fever.

Conclusions
From a programmatic standpoint, the malaria education was a success. Despite the presence of other malaria initiatives in the program area, participants in Freedom from Hunger’s malaria education saw greater marginal increases and significantly better outcomes. This indicates that the malaria education complemented the other activities to increase knowledge and positive behaviors. Yet, even the increased knowledge and behaviors often were impeded by gaps in a family’s ability to access promoted prevention methods such as ITNs. Microfinance can help a family purchase an ITN; however, there needs to be coordination with initiatives to increase local availability of ITNs for sale, particularly in rural communities.