PROFESSION AND INCIDENCE OF WATERBORNE PARASITES IN A HEALTH IMPACT STUDY OF FISHING COMMUNITIES ALONG LAKE VICTORIA IN UGANDA

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**Research Scope**

Using a combination of ethnographic, methods, healthcare facility chart reviews, and individual waterborne parasite tests, this study attempted to determine the effectiveness of community-based water treatment systems in reducing waterborne disease load and influencing water-related beliefs, behaviors, and practices along Lake Victoria in Uganda.

This and a similar study in Honduras (Deal, et al. 2010) were the first of their kind to combine such methodologies to measure the health impact of water treatment systems. This study is of particular relevance to Uganda, where diarrheal diseases are the fourth leading cause of death, accounting for 8% of deaths for all age groups (WHO, 2004). An estimated 87% of rural area is covered by an improved water source (WHO, 2004), yet those who live near Lake Victoria continue to drink the water, sometimes untreated.

**Methods**

Community assessments were implemented by in-country personnel to select six recipient communities/Wages for the study (3 test and 3 control). To determine waterborne disease load, subjects (age: 39.75) from selected households were tested for three parasitic parasites. All specimens were tested using the Trappe Micro Parasite Panel®. All subjects of any phase of the study who tested positive were treated with an age-adjusted dose of Fendazole.

Household-level semi-structured ethnographic interviews were conducted in the 2010 field season, followed by Knowledge, Attitude, and Practice (KAP) surveys developed for the 2011 field season.

**Data Collection**

During June and July of 2010, a team of researchers collected a total of 60 stool samples and 142 semi-structured interviews from selected households in all six study communities. In January 2011, construction of water treatment systems was completed in the three test communities.

In June and July of 2011, KAP surveys and stool samples were collected from 169 households (total n=616 participants/333 children, 283 adults).

**Study Findings**

Pathogen testing showed minimal change in disease load within test communities after water treatment system installation (1.6% initial test and 4.6% final test). This is in contrast to a similar study conducted in Honduras (Deal, et al at 2010). Ethnographic data collected showed a high level of knowledge of water and hygiene issues within households. It is hypothesized that regardless of knowledge of safe water practices, proximity to the lake continues to influence behavior, contributing to poorer health outcomes.

**Parasite Incidence by Profession (2011)**

<table>
<thead>
<tr>
<th>Profession</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisherman</td>
<td>0%</td>
</tr>
<tr>
<td>Farmer</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Conclusions**

- Differential outcomes of profession and corresponding waterborne disease load in the 2011 field season is likely a result of different understandings of the questions being asked in semi-structured interviews and the way subjects chose to interpret them.
- Through the use of a standardized KAP survey in the 2011 field season, a more accurate picture of waterborne parasites and their relationship with profession emerges to show the highest rates of infection to be among fishermen.
- This is important in determining the effectiveness of community-based water filtration systems in reducing waterborne disease load and influencing water usage behavior among fishing communities along Lake Victoria in Uganda.
- Such findings can help to focus future water and sanitation interventions in the region on individuals in professions which are at a greater risk of infection, and uncover barriers to drinking filtered water among these groups.