

# The impact of clean water supply by drilling boreholes on the diarrhoeal reduction of under-five children in Ghana

<b>Submission date</b> 21/02/2015	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 13/03/2015	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 24/07/2020	<b>Condition category</b> Digestive System	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Globally, about 88% of cases of diarrheal disease is due to an unsafe water supply and lack of sufficient sanitation and hygiene. Although a number of studies have been conducted to explore the effect of water quality treatments, the majority of them were based on inadequately randomized trials, used excessive recall period or trials were not blinded. In addition, there has been debate over the difference in the effect of household-based water treatment and improved water supply or source-based water between enthusiasts and sceptics of point-of-use treatment. This study aims to investigate the effect of an improved source-based water supply on the number of children under 5 suffering from diarrheal disease, employing rigorous methodology to overcome limitations previous studies encountered. We also aim ensure key findings are used as a basis for a better approach to providing good quality water.

### Who can participate?

Households with children under 5 years of age living in communities located in Krachi East and West district (Ghana).

### What does the study involve?

Communities taking place in the study are randomly allocated into one of two groups, an intervention group and a control group. Water boreholes are drilled in all communities but only those allocated to the intervention group are used for the duration of the study. Assessments include cases of diarrhoea in children under five, amount of safe drinking water, whether there is an increase in awareness and practice of handwashing and how long it takes to fetch water on a daily basis.

### What are the possible benefits and risks of participating?

We expect that the people living in communities in the intervention group to be less likely to contract diarrhoea, benefiting from clean water supply. Risks are not expected.

### Where is the study run from?

Communities in the Krachi West and Krachi East districts, Volta Region (Ghana)

When is the study starting and how long is it expected to run for?  
January 2012 to March 2015

Who is funding the study?  
Korea International Cooperation Agency

Who is the main contact?  
Dr Seungman Cha  
jesusdongja@hanmail.net

## Contact information

### Type(s)

Public

### Contact name

Dr Seungman Cha

### Contact details

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## Additional identifiers

### Protocol serial number

N/A

## Study information

### Scientific Title

Effect of clean water supply by drilling boreholes on diarrhoea incidence of under-five children in Krachi East and Krachi West districts, Volta region, Ghana using cluster randomized controlled trial

### Study objectives

Supplying safe water will reduce the diarrhoeal incidence of children under five children in Krachi West and Krachi East district, Volta Region, Ghana

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Ghana Health Service Ethical Review Committee, 21/03/2014, ref: GHS-ERC: 07/01/14

**Study design**

Phased-in design

**Primary study design**

Interventional

**Study type(s)**

Prevention

**Health condition(s) or problem(s) studied**

Diarrhoeal incidence of children under five.

**Interventions**

For intervention communities, boreholes were drilled and for control group, boreholes were also drilled but were utilized after conducting survey.

**Intervention Type**

Behavioural

**Primary outcome(s)**

Diarrhoeal prevalence of children under five (in the previous two weeks)

**Key secondary outcome(s)**

1. Quantity of safe water drinking
2. Time for fetching water per day
3. Knowledge, attitude, practice of handwashing at critical times

**Completion date**

31/03/2015

**Eligibility****Key inclusion criteria**

1. Household with children under 5 years of age
2. Mothers or caretakers agreeing on the participation of the survey with informed consent in written form.

**Participant type(s)**

Other

**Healthy volunteers allowed**

No

**Age group**

Child

**Upper age limit**

5 years

**Sex**

All

**Total final enrolment**

607

**Key exclusion criteria**

Children whose mothers or caretakers did not agree to register, by not signing a informed consent form

**Date of first enrolment**

03/10/2012

**Date of final enrolment**

05/02/2014

## **Locations**

**Countries of recruitment**

Ghana

Gibraltar

Greece

Greenland

Korea, South

**Study participating centre**

**Korea International Cooperation Agency (KOICA)**

825 Daewangpangyo-ro

Sejeong-gu

Seongman-si

Gyeonggi-do

Korea, South

461-833

**Study participating centre**

**Training, Research and Networking for Development (TREND)**

PO Box CT 6135

Ghana

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## **Sponsor information**

**Organisation**

Korea International Cooperation Agency

**ROR**

<https://ror.org/0106d7657>

## Funder(s)

**Funder type**

Government

**Funder Name**

Korea International Cooperation Agency

**Alternative Name(s)**

KOICA

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

Korea, South

## Results and Publications

**Individual participant data (IPD) sharing plan****IPD sharing plan summary**

Other

**Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	25/09/2015	24/07/2020	Yes	No