Kenya: Mombasa Students Develop Stones to Treat Snake Bites

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Coast Girls' School students have developed small black stones in efforts to save the lives of residents in Kongowea and Likoni after poisonous snake and scorpion bites.

The schoolgirls through a project led by the Aga Khan Academy, Mombasa and supported by Intel and the Aga Khan Foundation (USA), conducted a community survey that found residents from the two areas were facing ongoing challenge from snake and scorpion bites.

Educating Girls in Science (EGIS), a two-year pilot project launched last year by the Aga Khan Academy, Mombasa, is aimed at empowering girls by increasing their engagement in science and in applying their knowledge outside the classroom to benefit their community.

"Working with teachers, students and science clubs, we are using the Educating Girls in Science project to train girls how to use knowledge in science for problem-solving and not just for the exams," said Ms Lucy Mwandawiro, the project's coordinator and a Chemistry teacher at the academy.

The black stone, or viper stone, is a piece of processed bone from a cow's thigh bone used as a first aid measure for snake, scorpion and insect bites.

During the survey conducted in Kongowea and Likoni in Mombasa County, the students found that getting effective first aid and timely medical treatment after poisonous bites was difficult for the communities as they are located a long way from hospitals.

According to a Ministry of Health survey conducted in 1997, up to 30 per cent of snake bite incidences end in fatalities, because patients do not get timely first aid.

The need to help the residents in treating snake bites saw the 25 schoolgirls pitch their idea to the EGIS judges during the final project presentations at the Aga Khan Academy, Mombasa, in June this year, and they were provided with the financial and technical support to develop the stones for wider use.

The black stone is made by cleaning, drying and baking the thigh bone in order to increase its surface area and make it more absorptive. Traditionally, the black stone was prepared from any animal bone and left to cool in open air, a factor that re-oxidised the stone and reduced its absorptive ability.

The girls improved on this method, using the thigh bone due to its highly porous nature, and cooling baked bones in an air tight container, in order to preserve their absorptive power.

Once prepared, the black stone neutralises the fatal effects of a snake bite by soaking up the poison at the entry point. The stone is placed on the skin and a small cut is made on the bitten area until blood oozes out. The stone then absorbs the poison through capillary action reducing the fatality of a snake bite.

Though the Likoni and Kongowea residents are taking great interest in the stones, some of them think of them as a form of magic. But the Coast Girls' School students hope to change the mindset by explaining to the residents how the stones work scientifically.

The students also found that some of the stones sold in the areas are of poor quality and are embarking on the process of training people on how to make the stones more effectively.

The stones are cost-effective for the residents, since they can be re-used several times. After use, the stones are boiled in salty water, soaked for several hours in fresh milk and then dried again to restore their absorptive nature.

The Coast Girls' School is one of the 24 schools that Aga Khan Academy, Mombasa is working with to solve community-based problems using classroom science through the EGIS project.

The project started with nine schools in Mombasa County in 2014, but extended to Kwale County in August 2015 where it is now working with 15 schools.