

# A Novel First Aid Curriculum Improves First Aid Knowledge in Laypersons in Rural Nicaragua

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## INTRODUCTION

### Background

- Most first aid curricula are based on assumptions appropriate to the developed world, such as calling 911 for an ambulance. Where resources like an emergency response system do not exist, the tenets of these curricula do not hold.
- Nicaragua is the second-poorest country in the Western hemisphere, and lacks a comprehensive pre-hospital system.

### Objectives

- To develop a basic, evidence-based first aid course for lay people that is appropriate for a rural Nicaraguan community with limited material resources and limited access to more advanced care.
- To evaluate the level of knowledge of the participants before and after the course.

### Hypothesis

- A four-hour course in basic, resource-appropriate first aid techniques would improve knowledge of participants.

Figure 1

Curriculum Topics
Scene safety and personal protection
Patient position and transport
Bleeding control, including epistaxis
Bandaging and splinting
Bites and stings
Burns
Unconsciousness/ choking
Ingestions
Eye injuries

## METHODS

### Curriculum Development

- Few publications relevant to first aid curricula in the developing world.
- The WHO's essential techniques for basic providers was used to select topics (Figure 1).
- Modules were developed with visual aids demonstrating the techniques, with hands-on activities for reinforcement.

### Study Design

- Anonymous survey questionnaire administered before and after a first aid seminar using the novel curriculum.
- IRB approval was obtained from both Stony Brook and UNAN-León.

### Setting

- Nuevo Amanecer, a rural community outside León, Nicaragua.

### Subjects

- Volunteers > 15 years old who agreed to participate.

### Measures & Outcomes

- Measures: age, previous exposure to first aid training, and experience providing first aid; post-course evaluation.
- Primary outcome: percent correct on the post course evaluation.

### Analysis

- Descriptive Statistics were used to report demographics.
- A two sample Wilcoxon rank sum test was used to compare pre and post test scores.

## RESULTS

- 19 subjects returned the pre-assessment and 23 returned the post.
- Mean age was 25.2 years.
- None had previous first aid instruction
- 3/19 (15.8%) had provided first aid.
- The median percent correct on the pre test assessment was 30 (IQR 20-40). The median on the post-test was 50 (IQR 40-60) a statistically significant improvement ( $p < 0.01$ ). (Figure 2).
- 21/22 (95.5%) thought the program was useful.
- 21/21 (100%) felt more comfortable providing first aid after the class.
- 20/21 (95.2%) were interested in further classes.

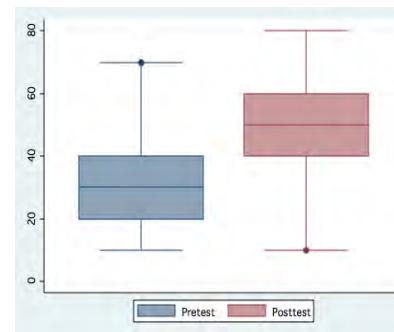


Figure 2: Median test score before and after course.

## LIMITATIONS

- Low literacy level of some participants, making written survey problematic.
- No testing of hands-on skills.

## CONCLUSIONS

- Few first aid curricula are applicable to the developing world. In rural Nicaragua, laypersons had no prior exposure to first aid. After the course, knowledge of and comfort level with basic first aid improved.

## DISCLOSURES

- Supported by an EMRA Local Action Grant and the Department of Emergency Medicine at Stony Brook University.



Figure 3: Course participants practice bandaging and using personal protective equipment.