

Impact of the Guatemalan Nursing Program on Treatment Abandonment in Children with Cancer

Sara W. Day, PhD, RN, FAAN

Rita M. Carty, PhD, RN, FAAN

Leslie M. McKeon, PhD, RN

Childhood Cancer in Developing Countries

- 220,000 children diagnosed with cancer annually
- What percentage of these children live in developing countries?

20%

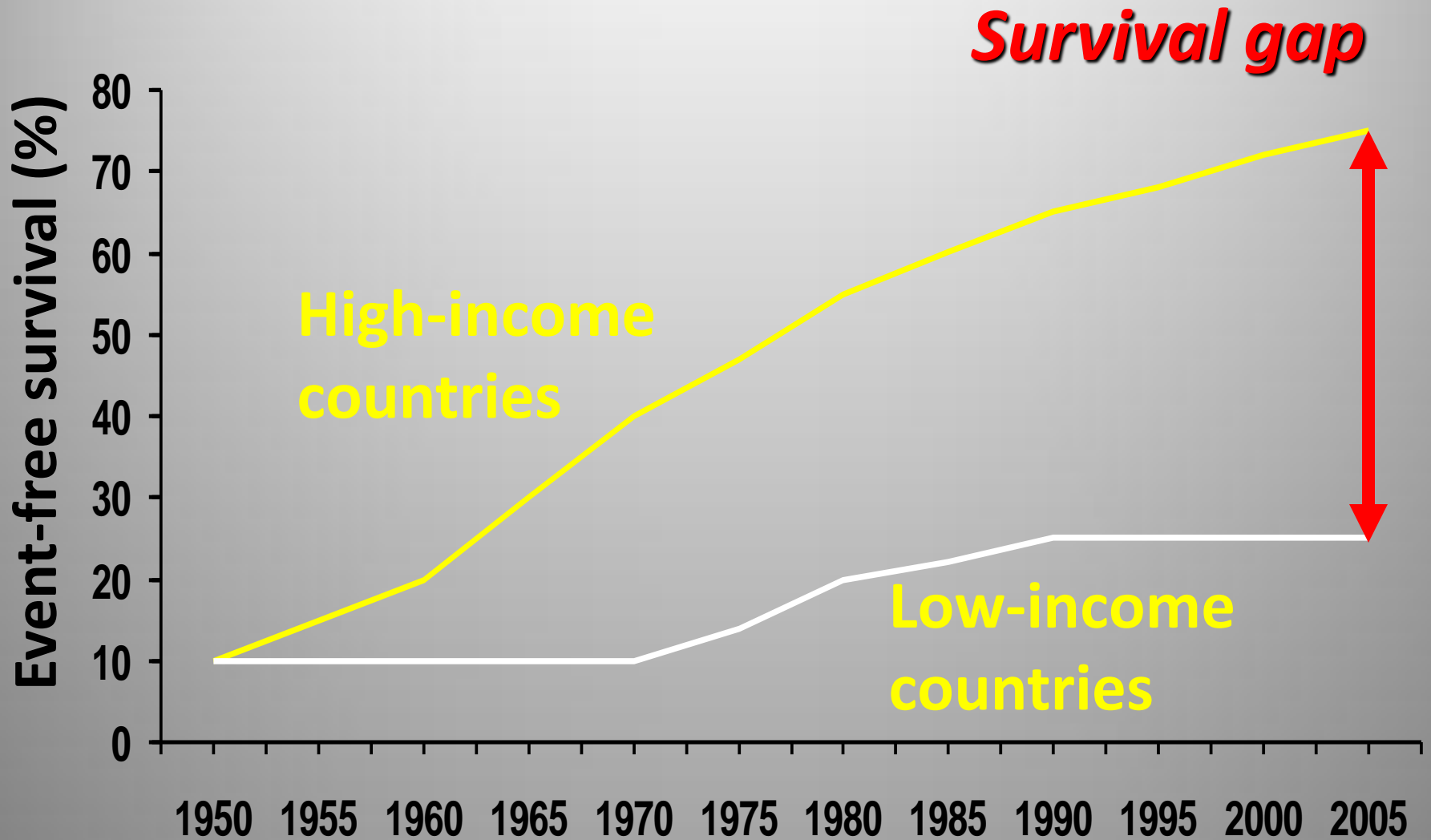
60%

80%

Childhood Cancer in Developing Countries

- Chance of survival in developing country is dismal, less than 20%
- Extreme discomfort is likely, due to absence of palliative care

Pediatric cancer survival gap



Nursing Needs

- Cornerstone of successful treatment: care in pediatric cancer units by specialized professionals
 - Nurses largest group of health care professionals
 - Oncology care requires advanced knowledge and clinical skills
 - Developed countries: nurses receive extensive education and clinical training
 - Developing countries: education often not available

Nursing Needs

- Nursing Challenges
 - Value of nursing
 - Patient nurse ratio is high
 - Poor communication with other disciplines
 - Computer access limited or not available
 - Limited resources

Nurses have tremendous responsibility with little preparation and limited resources

Nursing Research

- Inadequate nursing education, staffing and resources contribute to disparity in childhood cancer outcomes
 - Research in US, Canada, UK :
 - Adequate nurse staffing contributes to decreased hospital stay, complications, and mortality
 - Nursing education contributes to improved patient outcomes, including mortality
 - Nursing research limited in developing countries:
1 study in Zambia

Guatemalan Nursing Program

- The quality of nursing care was assessed at National Pediatric Oncology Unit Guatemala
 - Joint Commission International (JCI) Standards from six domains assessed
 - Of 20 standards assessed, only one was met
 - Most critical needs in domain of Staff Qualifications and Education

Guatemala Partner Site



Guatemalan Nursing Program

- 2007: Comprehensive nursing program was developed and implemented
 - Advance the work environment by improving nursing quality standards
 - Provide pediatric oncology nursing education and clinical training

Advance Work Environment

- Worked with hospital leaders
 - Developed focused plan targeting unmet standards
 - 2006: 1 of 20 met
 - 2009: 16 of 20 met
- Improved staffing
 - Created 24 new nursing positions
 - Decreased nurse patient ratio from 1:7 to 1:5

Provide Nursing Education

- Full time nurse educator hired
 - Responsibilities included:
 - Implement a pediatric oncology education course for newly hired nurses
 - Implement chemotherapy administration and central venous line care courses
 - Provide continuing education classes

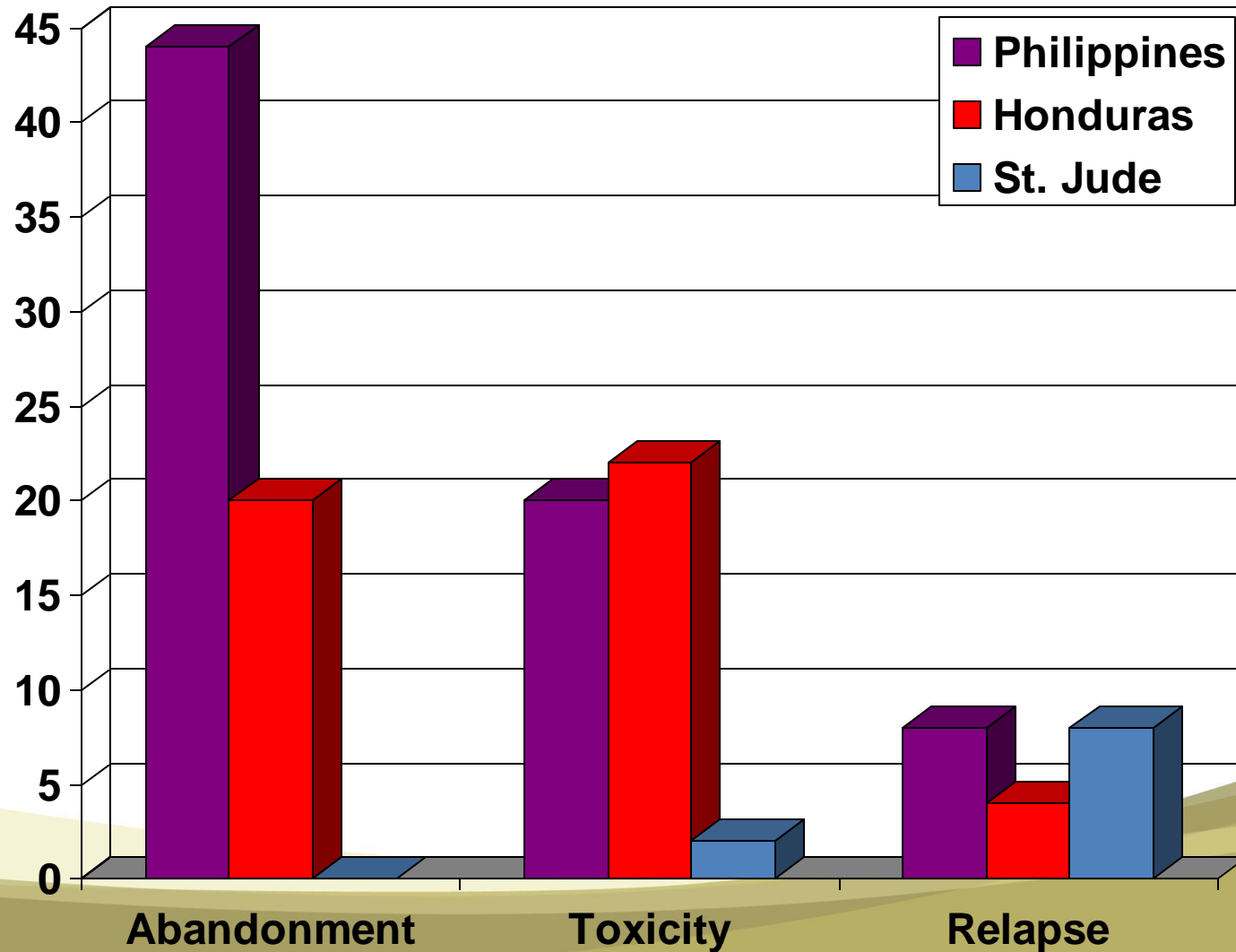
Purpose of the Study

- To evaluate the Guatemalan Nursing Program's impact on treatment abandonment in children with cancer
- Treatment abandonment is 4 weeks of missed appointments during active treatment

Purpose of Study

- Treatment abandonment is a critical problem in developing countries and a leading cause of death in children with cancer
- This was part of a larger study evaluating the impact of the program on staff, organizational and clinical outcomes

Why is there a survival gap?



Fidelity of Guatemalan Nursing Program

- Fidelity: How well program is operationalized
 - Causal relationship with program outcomes can only be determined if program was implemented as designed
- Program implementation closely monitored via monthly reports documenting education activities and site visits

Program Fidelity

- Critical aspect of program fidelity was preparation and support for nurse educator
 - Preparation
 - Completed 4 week educator course at Latin American Center for Pediatric Oncology Nursing Education
 - Support
 - Educational resources
 - Phone conferences with educator and medical director
 - Educator meetings twice a month

Study Design

- Logic Model Theory provided the conceptual framework
- Roadmap that illustrates sequence of events connecting the need for the program and program interventions with the program's impact

Study Design

- Quasi experimental design using control site comparison
- Intervention and control sites shared similar:
 - Demographics
 - Financial support
 - Nursing structure
 - Patient population
 - Treatment protocols

Study Design

- Pre program Cumulative Incidence (CIN) of treatment abandonment was compared to post program CIN of treatment abandonment
- Pre program: patients diagnosed 1-01-04 to 12-31-06
- Post program: patients diagnosed 1-01-07 to 10-01-08
- Within site and control site comparison
- Comparisons on all cancer patients and subgroup with acute lymphoblastic leukemia

Data Collection

- Clinical outcomes: Data collected from Pediatric Oncology Networked Data Base (POND)

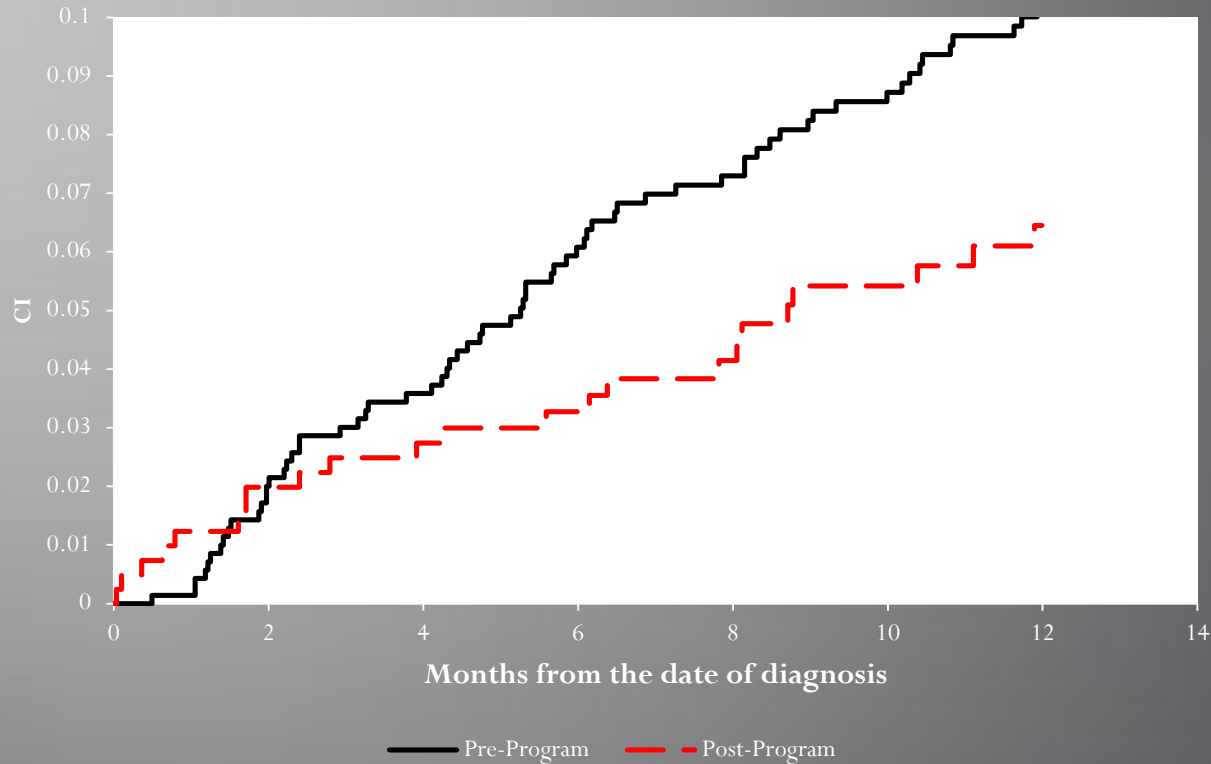
Patient Sample

- All patients at Pediatric Oncology Cancer Units in Guatemala and Honduras dx with cancer between 1-1-04 and 10-1-08 and registered in POND
- Population based sample
 - Guatemala: 1145 patients
 - ALL: 513
 - Honduras: 791 patients (lower population of country)
 - ALL: 410

Specific Aim 1

- 1. Compare pre/post program cumulative incidence (CIN) of treatment abandonment within 1st year of dx for all cancer patients at intervention site (Guatemala)

Guatemala 1 year CIN of abandonment pre/post program for all cancer patients



Pre program CIN of abandonment for all cancer patients (10.2) was statistically significantly higher ($p=0.04$) than post (6.5)

Specific Aim 2

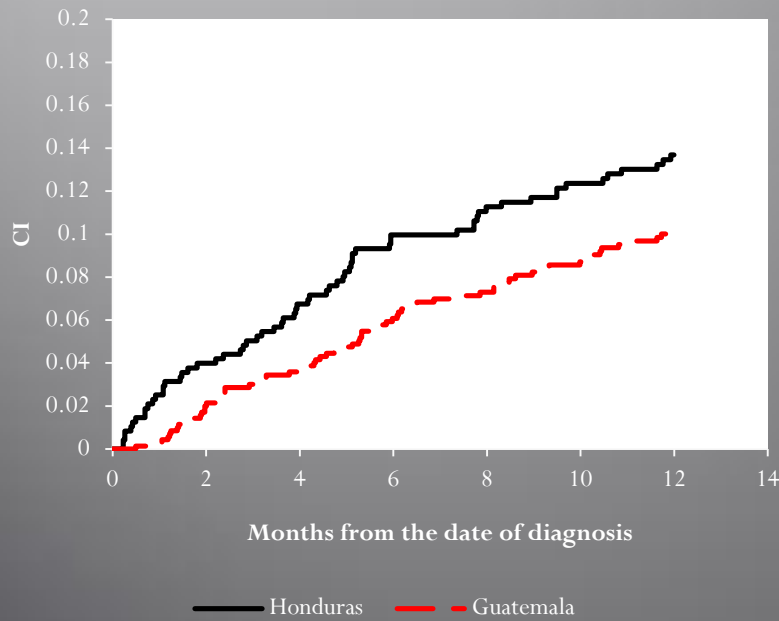
- 2. Compare pre/post program CIN of treatment abandonment within 1st year of dx for all cancer patients between intervention site and control site

Pre/post program abandonment for all cancer patients between Guatemala and Honduras

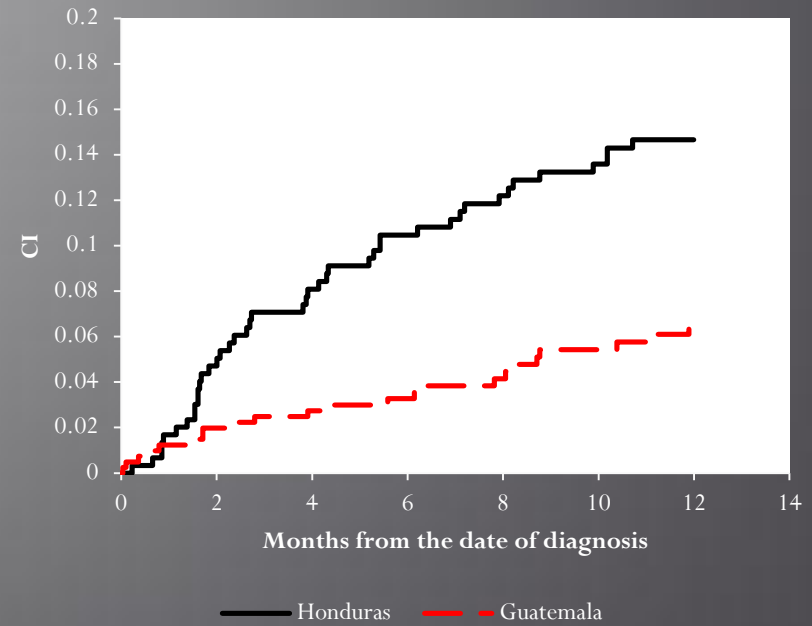
GUATEMALA PRE PROGRAM 10.2
HONDURAS 13.7, P= 0.05

GUATEMALA POST PROGRAM 6.5
HONDURAS 14.7, P <0.001

Pre program abandonment



Post program abandonment



Specific Aim 3

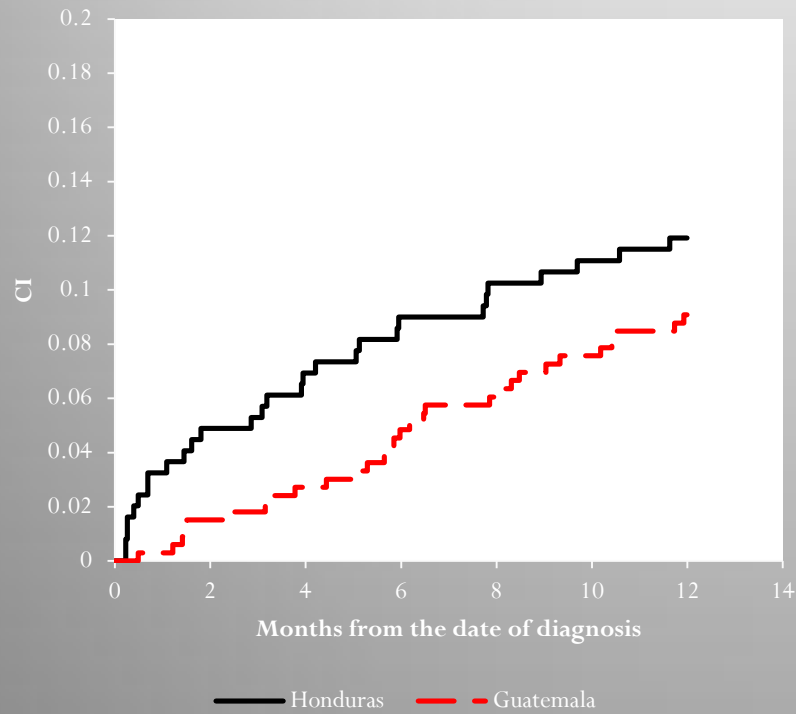
- 3. Compare the pre/post program CIN of treatment abandonment for patients with acute lymphoblastic leukemia (ALL) between the intervention site and control site
- ALL patients represented more homogeneous group

Pre/post program abandonment for ALL between intervention and control site

Guatemala 9.1

Honduras 11.9, p=0.23

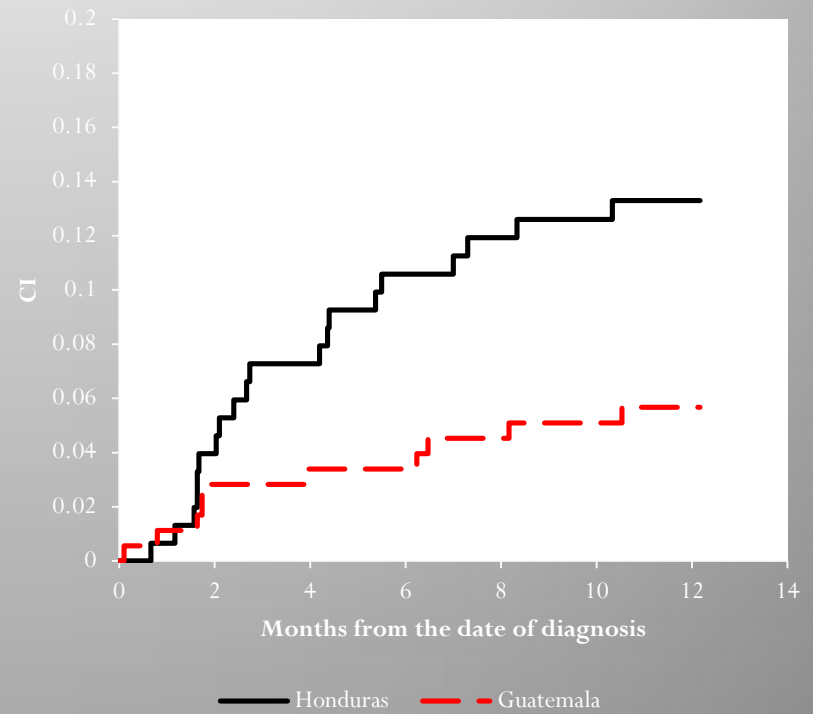
Pre program abandonment



Guatemala 5.7

Honduras 13.3, p=0.01

Post program abandonment



Conclusions

- Statistically significant association with an improved CIN of treatment abandonment
 - Well educated nurses are better able to provide parents with insight for need to continue treatment
 - Improved staffing allowed more time for parent teaching

Limitations

- Conducting research in a developing country with limited resources and distance, cultural and language barriers was the greatest limitation

Significance of Study

- 1st study in a developing country to examine effects of nursing interventions to improve education, staffing and quality standards on clinical outcomes
 - Extensive research done in US and Canada

Significance

- Many studies have looked at abandonment and its causes, this is the first study to evaluate effect of nursing on abandonment
- Abandonment is a critical problem in developing countries, patients who abandon treatment die
- The value of nursing is not recognized in many developing countries and this study has potential to impact professional role of pediatric oncology nurses and extent to which nursing's influence is valued

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Thank You

- Jose Garcia, Nurse Educator

