

## **Culture Change, Gender, and Fertility Decline in Honduras**

### **RESEARCH OBJECTIVE**

Demographic studies of fertility decline have often ignored the influence of changing gender roles on reproductive behavior and generally assume continuity between men and women's reproductive motivations (Dodoo 1994; Riley 1998). Often, studies of reproductive behavior focus solely on women and exclude men (Dodoo 1998). However, reproductive behavior is not an individual attribute. It requires the participation of two people who often have conflicting reproductive interests. Anthropological studies that highlight changing gender expectations and power relations in different social situations are necessary to fully explore the effect of gender on reproductive behavior.

My objective is to contribute to the continuing effort to understand the process of fertility decline. The causes of the "Second Demographic Transition", which began in Europe more than a century ago and proceeds in many parts of the developing world today, are still poorly understood (Low 1994, p. 224). Demographers have uncovered many variables that correlate with changes in reproductive behavior, but there is little understanding of what is consistent among the many transitions that have occurred since the mid 19<sup>th</sup> century.

Anthropological investigations of this phenomenon are important because demographic studies using aggregate data sets have often been unable to detect patterns or predict instances of fertility decline onset (Bongaarts 1996). Anthropological community studies using exploratory, qualitative data collection methods can uncover important variables that are either poorly operationalized or not collected at all in aggregate studies. These types of studies are also important because they are able to highlight subtle variation in behaviors and attitudes that may be lost at the aggregate level. Demographers have recently begun to incorporate "culture" into their statistical models but have done so with an outdated definition of culture that assumes continuity in thought and behavior for social groups (Hammel 1990). An anthropological study that fully operationalizes culture can both verify the validity of cultural categories and determine the effect of intra-cultural variation on reproductive behavior.

The specific objective of this project are as follows:

- To explore the inter- and intra-cultural differences between men and women in urban and rural Honduras.
- To develop a cognitive model of the cultural domain of "natality", comprising ideas about whether to have children, when to have children, and how many children to have.
- To operationalize "natality culture" by adapting a scale that measures childbearing motivation for use in Honduras.
- To test the hypotheses that during fertility transitions, women's culture of natality changes faster than men's and this change is related to perceptions of economic opportunities for women.

### **PREVIOUS RESEARCH**

I began developing these hypotheses during prior fieldwork in Oaxaca City, Mexico. In Oaxaca, I conducted semi-structured interviews with men and women regarding their attitudes about family size during July and August of 1997. I had the interviews transcribed and coded by native Spanish speakers, evaluated codes for reliability and made statistical comparisons between the themes mentioned by men and women. I did not find any significant differences between the responses of men and women on any of the themes. This finding was contrary to my

expectations before conducting the interviews because I had been told that Mexican men typically wanted larger families than their wives. I hypothesized that, because Mexico is a country that has been experiencing fertility decline for several decades and because I was interviewing urban people, the cultural changes that accompanied fertility decline in Mexico may have progressed far enough so that urban men do not differ significantly with urban women in their attitudes. During pre-dissertation research visits to Honduras, I noted that there seemed to be much more variability in attitudes about fertility and decided that it was a good location for a follow-up to my Oaxaca research.

## **THEORETICAL BACKGROUND**

Demographic Transition Theory (DTT), developed by demographers in the middle of the 20<sup>th</sup> century, described many variables associated with fertility transitions and was long thought to explain fertility decline (Davis 1956; Notestein 1945). Empirical evidence has revealed that this theory explains neither the variety of conditions surrounding the onset of fertility declines nor the variety in pace of change for these declines (Bongaarts 1996). DTT is also unable to explain some particularly puzzling aspects of this decline such as the differential pace of adoption of family planning behavior when there appears to be a positive attitude towards limiting family size. Women – especially – often say that they want to have fewer children but do not actually take any steps to reduce their fertility (Westoff 1996).

A possible cause of this contradiction is that previous research on attitudes and the adoption of family planning methods has focused primarily on women's attitudes about family size (Hubacher 1997; Monteith 1997b). Information on men's attitudes about fertility decline is often obtained anecdotally (that is through what women say about men) (Razzaque 1999). Ethnographic evidence, however, suggests that gender differences in attitudes about optimal family size may be a major impediment in women's attempts to limit their fertility (Browner 1986). Studies that include men's attitudes about natality are necessary for understanding the fertility decline process. Some demographers have been critical of this neglect of men's attitudes about fertility. This criticism led to several studies comparing the effect of differential fertility attitudes between men and women (Dodoo 1994; Dodoo 1998; Ezeh 1993; Mason 1987). However, little of this research has taken place in Latin America and both demographers and anthropologists have stressed the need for more in-depth, context-centered studies that focus on men as well as women (Browner 1996; Dodoo 1994, p. 380).

The theoretical framework I will use for this project is a combination of the theoretical approaches of the anthropologists W. Penn Handwerker and Hillard Kaplan. Handwerker's "resource access theory" of culture change and fertility decline successfully incorporates a general framework of the causes of fertility decline with a model of how innovative ideas are generated in the minds of individual actors (Handwerker 1986; Handwerker 1989b). This theory accounts for the changes in attitudes about family size as a response to changing avenues for the access of resources. As an economy changes from agrarian to industrial, people are able to access income independently from other people, especially family members such as spouses and children. This leads to children being seen as expense rather than wealth, and power relations between women and men change, as women are better able to access income independently. This change in resource access causes a transformation in the "culture" of family size.

Handwerker's model holds that culture change is a creative process in which the ideas that form cultural models are generated inside the minds of individuals and are shared with others only metaphorically. The model also holds that culture does not simply consist of ideas

but rather a combination of ideas and behaviors which are constantly influencing each other and cannot be isolated (Handwerker 1989a). The overall function of this cultural system is to enable human beings to effectively deal with material realities and harvest energy from the environment for survival and reproduction. Handwerker also asserts that cultural continuity for groups of people cannot be assumed and its construct validity must be empirically demonstrated (Handwerker 2000).

Criticisms of fertility decline theories that rely on the reversal of “wealth flows” from children to parents (Caldwell 1982) can be answered through an augmentation of resource access theory with evolutionary and life history theories. This combination produces a more complete view of human reproductive behavior change. Criticisms of wealth flows theories have cited the lack of empirical evidence that children are ever actually a source of net wealth in any society with high fertility (Kaplan 1994; Turke 1991). There may be evidence that children are less costly in some economic situations, but there is no evidence that they ever can be effectively used as net investments. Life history theory augments wealth flows theories by assuming that humans have an evolutionarily influenced drive to mate and parent (Bock 1999; Hill 1999; Kaplan 1996; Miller 1999; Pérusse 1993). In the evolutionary past, those individuals who were motivated to participate in these activities were able to pass their genes on to future generations with high frequency. However, reproductive quantity must have been balanced against reproductive quality to assure offspring survival and subsequent offspring reproduction. Thus, reproductively central drives are accompanied by the drive to spend energy on somatic effort (tissue growth and maintenance). Somatic investment indirectly effects reproductive potential by making an individual better able to rear reproductively successful offspring. Because individuals can only spend energy harvested from the environment on one of these functions at a time, there are often conflicts between the multiple drives. Ecological realities of resource availability influence the choices that individuals make regarding which drives to hold more important.

Hillard Kaplan’s theory of embodied capital (Kaplan 1996) extends the conceptualization of somatic effort. Embodied capital includes, “strength, immune function, coordination, skill, and knowledge” which allow for more efficient allocation of energy and time towards “resource acquisition, defense from predators and parasites, mating competition, parenting, and social dominance” (Hill 1999, p. 402). Investing in embodied capital in the present can extend the lifespan, increase reproductive potential, and allow for future energy payoff to be greater than the energy originally invested. Industrial economies allow the availability of individually based income through wage labor and allow for humans to harvest energy from the environment in amounts unprecedented in human history. This “extra somatic” wealth production extends the long-term payoff of self and offspring investment. The ability to spend energy in the present for extreme future payoff creates an increased conflict for individuals when deciding between current reproductive and future investment energy expenditure. Although the conflict in itself is not novel, the amount which current investment energy expenditure can lead to future gain is certainly different than any environmental challenge that would have influenced human evolutionary development during the Pleistocene. This novel influence causes humans to exhibit reproductive behavior that does not meet the evolutionary criteria of fitness, defined as successful future genetic representation (Bock 1999, p. 197).

Males and females exhibit different behavioral solutions to the challenges of environmental limitations on the ability to pursue resources and reproduce. In general, although they are undeniably bound together through sexual reproduction, males and females are in competition with each other for resources and reproductive success (Low 2000; Ridley 1993).

Because of this competition and following from Handwerker's model of culture change and fertility decline and Kaplan's model of embodied capital, I hypothesize that the culture of family size would be different for men and women at different stages of fertility decline. Women are more likely to experience a heightened conflict between the pursuit of income or reproduction because of the greater energy expenditure required for them to reproduce compared with men. Men will be influenced by the changes in resource structure caused by industrialization and will undergo a change in their natalilty attitudes but at a slower rate than women. Because reproductive behavior depends on the combined behavior of women and men, it is likely that attitudes may change for women earlier than their behavior. As they gain economic independence, they are better able to match their reproductive behaviors with their attitudes. Men are additionally influenced to change their behavior as a result of the women's increased ability to choose their reproductive outcomes.

### **LOCATION OF PROPOSED RESEARCH**

I will use this framework of culture change and fertility decline to conduct research in Honduras on the cognitive models of optimal family size for men and women. Honduras has been characterized as a country that is in the early stages of the fertility transition, which makes it an ideal location to study the mechanisms of fertility decline (Chackiel 1996, p. 16). Honduras has a history of recent fertility decline but has been one of the countries with the slowest reduction in the number of births per woman (CELADE 1997, p. 4; Chackiel 1996, pp. 4-8). The main force that keeps the Honduran rates high is the extremely high rural fertility rates when compared with the rates in the urban areas (Chackiel 1996, p. 16-17; Monteith 1997b, p. 13). A very small percentage of Honduras's population is urban but this sector is growing rapidly (CELADE 1997, p. 38). This combination of early signs of fertility decline, rapid urban growth, and high variability between rural and urban areas in the rate of fertility presents an opportunity to test several hypotheses about the cultural and structural conditions of fertility decline.

I have worked in the city of Catacamas in Honduras on two research projects, the first during July of 1998 and the second from July through October of 2000 . Catacamas is an urban area that is located in the valley of the Patuka mountain range in Southeastern state of Olancho. During my visits, I developed a working relationship with a local NGO, named Predisan, which provides health care to both the people in Catacamas and people living in five different mountain communities surrounding the city. Predisan is a suitable contact in the area because it conducts studies on reproductive health and reproductive attitudes in and around Catacamas. I concluded from preliminary investigations that Catacamas would be an ideal location to undertake this project because it appeared to have sufficient variability in attitudes about family size. Also, my relationship with Predisan will facilitate an urban/rural comparison by providing access to interviews of people in both the city and in the surrounding rural areas.

### **HYPOTHESES**

If Honduras is on the verge of a steep decline in its birth rate, then, from this theoretical model, we would expect that in the rural areas (where there is currently a high rate of fertility yet early signs of decline) there will be a large difference in natality attitudes between men and women. Conversely, we expect that the difference between the attitudes of men and women in urban areas (where the fertility transition is already underway) will be more similar.

These hypotheses follow from resource access theory because women have different culture-changing forces on them than men. Central to resource access theory are changing

economic conditions, which cause increased opportunities for women to obtain incomes apart from their husbands or children. Therefore, women are the ones who will have the most conflict between new economic opportunities and parenting investment because they will only be able to access these new opportunities if they limit their fertility.

One puzzling result of previous studies of fertility decline was that the pattern of decline usually began in urban areas where economic changes had taken place but then spread to surrounding rural areas where the economic changes had not yet taken place (Bongaarts 1996; Watkins 1986, p. 445). The rapid spread of fertility decline from urban areas to rural areas before the economic opportunity structure of the rural areas have changed suggests that not only are economic opportunities important in fertility decline but *perceptions* of opportunities are also important. Thus, we expect from this model that rural people, who are experiencing similar economic changes as people in the urban areas but at a slower rate, would be at an earlier stage of change. This should result in a significant difference in attitudes between rural women and men.

The hypotheses to be tested with this research design can be stated explicitly:

- H<sub>1</sub>: Women in rural areas will have significantly lower pro-natal attitudes than rural men.
- H<sub>2</sub>: Men and women in urban areas will not differ significantly in their natality attitudes.
- H<sub>3</sub>: Rural people will perceive lower economic opportunities for women than urban people.
- H<sub>4</sub>: Individuals who have higher pro-natal attitudes will be more likely to have children than those with lower pro-natal attitudes.

In the research I propose here, I will compare rural and urban areas as a proxy for two different time-periods. This strategy (of using location as a proxy for time) has obvious flaws, but I believe that it is justified given the evidence that fertility decline begins in urban areas and spreads into the adjacent rural areas at a later time. A true test of a theory of culture change requires data collected during multiple points in time. In order to test the hypothesis that changes in the culture of optimal family size occur faster for women than men, I will need to repeat this study in Honduras. By using systematic methods of data collection now, I will be able to make the comparison in the future.

## **METHODOLOGY**

This project will combine both exploratory and confirmatory methods as well as qualitative and quantitative data. The exploratory stage of the project will serve as the basis for the collection of quantitative data. The end product of the exploratory stage of the project will be a cognitive model of natality for men and women. In order to measure the degree which men and women possess pro or anti-natal attitudes, I will adapt a scale that measures motivation towards childbearing and produce a quantitative comparison of individuals using this scale. The cognitive model of natality will inform the selection of items to be used in the adaptation of the scale.

***Exploratory Methods – Data collection.*** The exploratory methods will be based on participant-observation, unstructured interviews and semi-structured interviews. I will live in the city of Catacamas for six months beginning in mid-December 2000 and I will make many extended visits to the surrounding rural areas. During my prior experience in the area, I developed friendships with people who live in the city. I am confident that I can build on these friendships and develop others – friendships that will allow me to participate in events in people's lives and observe first-hand the forces that influence attitudes about children and behaviors that influence reproduction. When I visit the rural areas, I will live with families so

that I can participate in and observe their lives and have in-depth discussions about their various reproductive attitudes. Each day, I will take and code field notes of my observations and plan future activities based on what I have already experienced. A constant process of writing and coding field notes will help me place my hypotheses in context and let me continually test the validity of my assumptions.

During this initial period of unstructured participation and observation, I will set up semi-structured interviews and ask directed questions about the items that seem to be important to people in Catacamas. I will schedule sixty semi-structured interviews if time permits. Thirty of these interviews will be with men and thirty will be with women and I will attempt to interview people with a wide variety of age ranges, educational backgrounds, numbers of children, and economic status. The purpose of these interviews is to develop an understanding of the schemas and cultural models being used by area residents to influence their reproductive behavior (D'Andrade 1995; D'Andrade 1992; Strauss 1994; Strauss 1997).

I will note metaphors used by informants to describe their positive and negative feelings about childbearing/childrearing. I will listen for the use of these metaphors in general, non-interview context and observe behaviors related to these cultural models to determine how they influence daily life. I will pay particular attention to descriptions of conflict between parenting and economic opportunities and descriptions of changing gender roles as a result of this conflict. The attention to correspondence between ideas presented in interviews and ideas shared by informants with their social networks will allow me to assure that I am tapping into the "cloud of discourse" of reproduction (Hammel 1990). Hammel stresses that knowledge of this cloud is important for an understanding the cultural influence on demographic behavior.

These interviews will be based on a specific protocol, but will be open-ended and will not have a limit on the types of possible answers. I will allow the interviewees to direct the interviews so that they can tell me what things they consider to be important (Bernard 1994, p. 211-213; Spradley 1979). The technique I will use to prompt informants for answers is "freelisting" (Weller 1988). I will ask informants to list all the positive and negative motivations towards having children. I will also ask informants to freelist "types of economic opportunities" in general and "types of economic opportunities for women" in particular. Using a convenience sample for these semi-structured interviews. I will maximize diversity in my sample to assure the greatest possible variation in ideas. Because I will be exploring cultural variables, such as attitudes and preferences, rather than life-event variables, a convenience sample is appropriate for this part of my research (Handwerker and Wozniak, 1997). I will tape record all semi-structured interviews to allow for more in-depth analysis in the future.

In order to measure the degree to which men and women in Honduras possess pro or anti-natality attitudes and to assess the correspondence between natality attitudes and reproductive behavior, I will adapt a scale called the "Childbearing Questionnaire", which measures motivation towards childbearing (Miller 1995). Following the steps outlined by Susan Weller and Richard Brislin (Brislin 1986; Weller 1998) I will first use the freelisting technique described above to generate the items on the list *de novo* to assure that they are culturally appropriate. I have recently completed the step of translation and back-translation of the survey instrument from English to Spanish back to English. For those items not mentioned in the freelisting exercise, I will ask follow-up questions about these items to note how appropriate they are in this cultural setting. Instead of designing an entirely new scale, I will add any new items generated during the freelisting exercise to the instrument so that I will be able to compare my results to previous research using the original instrument.

**Structured Interviewing--Variables.** In addition to the score on the childbearing motivation instrument, other variables that I will measure during structured interviewing: socio-economic status, age, education, number of children, and perception of the opportunity for women to independently access economic resources. I will assess Socio-economic status using questions developed in a 1996 survey conducted nationally in Honduras about reproductive health (Monteith 1997a). These questions create an SES index score for respondents by asking them which of the following items they have/own: electricity, indoor plumbing, indoor waste disposal, a radio, a television, and a car. I will use these questions because they have already been used in Honduras and have been determined to be culturally specific. Also, asking these questions exactly as they were asked in this national survey will allow me to compare my findings with a national sample. For age I will simply ask how old the person is in years, and for education, I will ask how many years they went to school. For number of children, I will elicit complete reproductive histories of each respondent, including number of children ever born, number of children surviving, and age at which each child not surviving died. For perception of economic opportunity for women, I will ask the structured interview informants if they think women are able to participate in the economic opportunities mentioned in the freelisting exercise producing a binomial response (1=yes, 0=no). This will allow for an overall index score of the perception of women's ability to participate in economic opportunities. Once I have completed the exploratory phase, I will create a questionnaire containing these structured questions.

**Structured Interviewing -- Sampling.** Fortunately, I have access to data from a reproductive health survey administered in October and November of 1998 in Catacamas and the surrounding rural regions including names and addresses of informants. Predisan, the NGO with which I will be collaborating, conducted these interviews on a random sample of 1,000 women selected from census tracks. I will use this existing sampling frame for my structured interviews by selecting a simple random sample of 200 women from the list of participants of the 1998 survey. I will follow all Institutional Review Board guidelines by informing each informant of his or her rights as an informant and I will allow each respondent to refuse to be interviewed or to answer any question. I will create an identification number for each informant and I will keep their names separate from the data I collect.

I will interview 100 of these women and I will interview 100 matched males for the remaining 100 women. In order to match a male to a female for the second group of women, I will interview the husbands of the married women and I will interview a male who is close in characteristics (age, education, are of local residence, etc.) to the chosen non-married women. For the women, I will update the reproductive history data from the previous survey noting all children born/dying in the previous two years. For the men, I will elicit a complete reproductive history of the children they have fathered including children ever born and children surviving.

**Data Analysis/Hypothesis Testing.** Once I have scores on the natality scale, I will determine the average natality score for women and men in the rural and urban areas. High scores will represent those who value having a large family while low scores will represent anti-natality. In order to control for possible threats to internal validity of the scale's correspondence with the construct "natality culture", I will use multiple regression with the natality score as the dependent variable. The independent variables will include gender and rural/urban. Because education and wealth (operationalized as the SES index) can influence natality attitudes independently of gender and location, I will include these variables in a multiple regression equation. In order to test  $H_1$  and  $H_2$ , I will analyze how well gender and location predict the natality score using the regression procedure in SAS. I expect that the interaction between

gender and location (rural or urban) will be significant. In order to test  $H_3$ , I will use the perceptions of economic opportunities for women as a dependent variable in a regression equation with rural/urban as an independent variable. Once again, I will control for education and SES in the multiple regression procedure. If during my exploratory phase of research I encounter other possible factors that will be threats to internal validity, I will also collect data on these variables and I will control for them in the final regression equation.

I will test  $H_4$  with multiple logistic regression using the GENMOD procedure in SAS. If an individual had a child in the past two years (or since the previous survey), they will be given a score of 1. If they did not have a child in the past two years, they will be given a score of 0. This dichotomous variable will be used as a dependent variable in a logistic regression equation. The independent predictor variable will be the natality score. Age, education and SES will be used as controls. I will also test a model including perception of economic opportunities to determine if there is interaction between this and natality scores.

### RESEARCH SCHEDULE

<b>Dates</b>	<b>Activities</b>
December, 2000	Enter field location, meet with Predisan director, locate interviewers, transcribers, coders, begin unstructured and semi-structured interviews. Visit surrounding rural areas.
January, 2001	Continue unstructured and semi-structured interviews in both urban and rural settings. Modify wording of Questionnaire.
February, 2001	Continue unstructured and semi-structured interviews in both rural and urban settings. Modify wording of Questionnaire.
March, 2001	Continue unstructured and semi-structured interviews in both rural and urban settings. Begin structured interviews in urban setting.
April, 2001	Conduct structured interviews in urban setting.
May, 2001	Conduct structured interviews in rural setting.
June, 2001	Conduct structured interviews in rural setting. Leave field.

### COLLABORATION ARRANGEMENTS

My relationship with Predisan will facilitate an urban/rural comparison through helping me gain access to interviewing people both in the city and in the surrounding rural areas as well as providing interviewers, transcribers, and coders. One of Predisan's main organizational objectives is to facilitate students' research projects in the area of health. This applies to my project because I am conducting this research to collect the primary data to be used in my dissertation in anthropology at the University of Florida.

It is my plan to work closely with Predisan during each phase of this research, both utilizing their services for communication, field site entry, and field assistants while allowing them use of data I have collected and training members of their staff in research methodology

and data handling. I am currently working with Predisan in Catacamas on a post-disaster nutritional research project funded by the National Science Foundation. Because I will be re-interviewing participants in a previous reproductive health survey conducted by Predisan in 1998, the data I collect will be helpful for the longitudinal evaluation of their reproductive health services.

One of my ultimate goals is to develop a research/publication relationship with Predisan's director, Dra. Amanda Madrid, and other Honduran scholars who are also studying reproductive health and fertility decline. This will allow for the repetition this project in the future so that a true longitudinal study of changes over time can take place.

### **BUDGET AND JUSTIFICATION**

<b>Category</b>	<b>Item</b>	<b>Price</b>	<b>Unit Number</b>	<b>Total</b>
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1. Travel to Honduras	Air Fare	\$590	1	\$590
2. Travel Subsistence	Lodging	\$200/month	6	\$1,200
	Food	\$120/month	6	\$720
	Stipend	\$20/day	180	\$3,600
3. Computer Services	Internet Service Provider	\$15/month	6	\$90
4. Personnel	Transcription	\$5.00/hour	60*5 hours	\$1,500
5. Personnel	Interviewing	\$10/interview	200	\$2,000
6. Personnel	Coding	\$5.00/hour	60	<u>\$300</u>
			Total:	\$10,000

### **JUSTIFICATION:**

1. Estimated ticket price from Florida to Tegucigalpa, Honduras to conduct field investigation.
2. Estimated cost for living in field site (Catacamas, Olancho, Honduras) for six months. Cost of living and stipend expenses is estimated from previous field stay in July 1998 and July – October 2000.
3. Estimated cost associated with securing a connection to internet during six month stay in order to communicate with colleagues in Florida.
4. Estimated cost of paying someone at field site to transcribe 60 semi-structured, tape recorded interviews. This will allow for systematic analysis of exploratory data to formulate creation of structured questionnaires. Estimated 5 hours of transcription for each hour of interview. Each interview estimated to be one hour long.
5. Estimated cost per interview for local interviewer to conduct structured interviews. Estimate includes transportation cost and salary of interviewer(s).
6. Estimated cost of paying someone in field site to code 60 transcribed interviews. This will allow for analysis of exploratory data to formulate creation of structured questionnaires.

## Letter of Support and Collaboration with Predisan:

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### A QUIEN INTERESE

Por medio de la presente la Organización Hondureña Predicar y Sanar (PREDISAN); hace constar que el Sr. David patrick Kennedy, estudiante de la Universty of Florida, ha colaborado con nosotros en nuestro proyecto en salud a través de un estudio sobre prevalencia de epilepsia en el área #2 del Dpto. de Olancho.

El cual cuenta con nuestro apoyo, para posibles investigaciones futuras.

Para los fines que el interesado convenga se le extiende la presente a los 23 del mes de Julio de mil novecientos noventa y ocho.

Atentamente,

  
Dr. Carlos Alvarez  
Subdirector



LUCAS 9:2 " Y los envió a predicar el reino de Dios y sanar a los enfermos. "