Level of Knowledge about Pap Screening and Cervical Cancer Associated to the Fear, Stress or Shame of the Pap Procedure in a Low Socioeconomic Population in Lima, Peru

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Background

Cervical cancer is an important public health problem in Peru. The 1997 incidence rate in the city of Lima was recorded as 27.3 per 100,000. In the city of Trujillo, the rate was as high as 33.5 per 100,000, which was second highest in all of Latin America. The most common malignant neoplasm in Peru is cervical cancer. According to the National Institute of Neoplastic Diseases (INEN), 29.1% of all malignant neoplasms in women from 1985 to 1997 were due to cervical cancer. The Anti-Cancer League in Peru has found that 80% to 86% of women examined between 1953 and 1994 with cervical neoplasms were diagnosed at an advanced stage. Mortality data is much too difficult to measure; there is still no national cancer registry in Peru where under-registration of deaths has been reported at 52.9%.

Objective

To find a correlation between the level of knowledge of cervical cancer and pap screening with the fear, stress or shame related to the Papanicolaou procedure in women from a low socioeconomic status community in Lima, Peru.

Materials and Methods

A community based, cross sectional prospective study was carried out between July and August 2001 in Motupe, a marginalized community of Lima, Peru. We included women between the ages of 18 to 50 years and excluded only those with problems speaking Spanish or a mental disability. Selection was a simple random sample of all households within the community of Motupe.

Two female interviewers (the co-principal investigators) from the University of Washington received cultural awareness training before conducting the interviews. In addition, two promotoras, or lay health educators, from the Motupe community were hired to support the interviewers and to serve as principal contacts between the interviewers and the participants.

The study was introduced as a questionnaire about women’s health including the Papanicolaou test and cervical cancer. Each participant was read a disclosure statement, a verbal consent was provided a second time, immediately preceding the interview.

A 45 minute standardized interview was used. It contained questions about demographic characteristics, sexual and reproductive history, history of pap screening, knowledge of pap smear and cervical cancer (12 questions), and fear, stress or shame associated with pap screening (6 questions). Participants were interviewed at home or at the primary health center of the community, according to the preference of the participant.

Data were analyzed using SPSS 10. Bivariate analysis was carried out using Chi square tests. Odds ratios (OR) and 95% confidence intervals (95% CI) were estimated and used to evaluate the association between the level of knowledge about cervical cancer (and other independent variables) and the presence of fear, stress or shame related to the pap screening. To control for confounders, multivariate analysis using logistic regression models were estimated where the dependent variable was the presence or absence of stress, fear and shame associated with the pap-screening and the independent variables were all those associated (or marginally associated) variables identified during bivariate analyses.

Results

A total of 309 women were interviewed. The average age was 31 years, of which 15% were adolescents. A majority, 82%, had been born in other provinces of the country besides Lima, mostly in the mid-sierra region and 56.3% reported living in Lima for 15 years or more. The mean number of years studied was 7.8, 36.3% only completed primary school and 4% had no schooling. Fifty-seven percent reported their marital status as “living as married” and 18.7% were housewives.

Almost 70% initiated sexual activity by the age of 19 or younger, with 7% beginning at age 15. Only 10% reported having had more than one sexual partner during the last year. Almost half, 48.2%, had two or more pregnancies, whereas 87% of those having had a pregnancy also reported having some prenatal care, and 20% chose to have their last delivery in their home. Nearly 40% of the women do not use any type of contraceptive. In those that were using, hormonal contraceptives were most commonly used (28.7%).

The mean number of times a woman has ever had a Pap was 2.6 times. Twenty percent had their last Pap over two years ago and an additional 20% had never had a Pap in their lifetime. In the latter, not knowing what the Pap test was (27%), was the main reason for never having one. In women that were overdue for the Pap, not considering it to be important (27%), was the main reason for not having had a Pap in the last year.

Table 1 shows the factors associated with the presence of fear, stress or shame with the Pap test. The dependent variable was the presence of fear/stress in women that have previously had a Pap test or fear/shame in women who have never had a Pap test. The OR and 95% CI levels are shown for both the univariate and multivariate analysis. It is noteworthy that the lack of Pap and cervical cancer knowledge is statistically and independently associated with the presence of fear, stress or shame, or shyness (OR 3.2, 95% CI 1.6, 6.4) of taking the Pap.

Discussion

Our findings suggest that the lack of knowledge about the Papanicolaou test and cervical cancer leads to under-utilization of screening for cervical cancer due to fear, stress or shame associated with this procedure. Since most women cited health establishments as the prime source for information about the Pap test and cervical cancer, and there is still a large proportion of women that do not have a high level of knowledge about this topic, the health establishments are either not effective at teaching the women about the Pap and cervical cancer, or they are not effective in reaching the population most at risk.

A good area of intervention would be to inform women about the Pap and cervical cancer during their prenatal care or family planning visits. If women can be effectively educated about the disease without causing them to feel afraid or stressed, they will be more likely to seek preventive care. Health care establishments can play a role in decreasing the fear of the Pap test and cervical cancer and increasing the rates of screening and the probability of early diagnosis of the disease.

Based on our findings, we suggest a better use of the existing network of promotoras to implement a community-based intervention program that targets women exhibiting the lowest utilization patterns and who are in lower educational and socioeconomic status. This program should incorporate prevention and treatment of cervical cancer. Promotoras would be key personnel for such programs because of their accessibility, particularly to those who underutilize women’s health services.
Analysis of a Newspaper’s Coverage of the HIV/AIDS Epidemic in Zimbabwe

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Objective
This project sought to examine the coverage of the HIV/AIDS epidemic in Zimbabwe by the Herald, a leading Zimbabwean newspaper. HIV/AIDS related articles published between 1997 and 2000 were reviewed for their headlines, content, themes, and style.

Introduction
Zimbabwe is a Southern African country of about 12 million. By the end of 1999, 1.4 million Zimbabweans— one in four of these between the ages of 15 and 49— were believed to be living with HIV/AIDS. The media is an important tool for disseminating information. Prior studies examining the role of media in Zimbabwe found that newspapers were cited most frequently as the major source of information. The impact of HIV/AIDS is further made worse by the stigma surrounding the disease. Thus it is important to examine media reporting of HIV/AIDS in Zimbabwe.

Methods
We used information from a newspaper library at the Southern Africa AIDS Information Service (SAAFIS). From this collection, we selected the Herald newspaper because it is a long-running and prominent newspaper in Zimbabwe. There was a random selection process in which the first five Herald articles of each month for the years 1997-2000 were selected for this study. Sixty articles per year and two hundred total were analyzed for their content, style, and terminology.

Content:
- Articles were classified as: 1) an article; 2) an editorial; 3) a letter to the editor; 4) an opinion column; 5) a cartoon; or 6) a brief

Language:
- The language within article headlines was examined for appropriateness. Within the articles, types of words used to reference HIV/AIDS were analyzed. Newspaper headlines were examined to see if they fell into one or more of 8 narrowly constructed categories: 1) women; 2) adolescent girls; 3) men; 29 adolescent boys; 3) children; 4) politics; 5) culture/religions; 6) church; or 7) other. Articles were also investigated to see if their focus was local or non-local. All results were quantified.

Table 1

<table>
<thead>
<tr>
<th>Language within Articles</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;AIDS&quot;</td>
<td>43.00%</td>
<td>71.70%</td>
<td>71.70%</td>
<td>66.70%</td>
</tr>
<tr>
<td>&quot;HIV&quot;</td>
<td>21.70%</td>
<td>16.70%</td>
<td>18.30%</td>
<td>18.30%</td>
</tr>
<tr>
<td>&quot;PLWHV&quot;/&quot;PLHWA&quot;/&quot;PLWHA&quot;</td>
<td>1.70%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>3.30%</td>
</tr>
<tr>
<td>&quot;victim&quot;</td>
<td>0.00%</td>
<td>3.30%</td>
<td>6.70%</td>
<td>0.00%</td>
</tr>
<tr>
<td>&quot;Aids patient&quot;</td>
<td>5.00%</td>
<td>3.30%</td>
<td>5.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>&quot;Aids orphan&quot;</td>
<td>0.00%</td>
<td>1.70%</td>
<td>6.70%</td>
<td>0.00%</td>
</tr>
<tr>
<td>&quot;pandemic or epidemic&quot;</td>
<td>1.70%</td>
<td>3.30%</td>
<td>0.00%</td>
<td>6.70%</td>
</tr>
<tr>
<td>&quot;AIDS&quot;</td>
<td>1.70%</td>
<td>1.70%</td>
<td>6.70%</td>
<td>1.70%</td>
</tr>
</tbody>
</table>

Results

Messages of HIV/AIDS impact, medical research, prevention, and awareness, and politics and economics were among the common themes (Table 1). Articles with themes of personal portrayal, alternative care, and women with HIV/AIDS were often minimal. The issue of children, orphans, and the impact of HIV/AIDS increased over the years while themes of human rights showed a decline. Articles were the principal type of newspaper clipping.

When examining headline language (Table 2), AIDS was more often mentioned than HIV. Terms such as “AIDS orphans”, “victim” and “AIDS patient” were not common within headlines. Within articles, terms such as “sufferer” and “victim” were present, but not common (Figure 1). This work was supported by a grant from the Fogarty International Center, National Institutes of Health and the University of Washington.
Assessment of Reproductive Health Among Women Ages 15-49 Years in Pedro Moncayo County, Ecuador: A Multidisciplinary Approach

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Objective
The purpose of this study was to determine the state of reproductive health among women of reproductive age between 15 and 49 years in Pedro Moncayo County (PMC), Ecuador and communicate this information to the residents of the county.

Introduction
PMC includes the parishes of Malchingui, Tocachi, La Esperanza, Tabacundo and Tupigachi located in the province of Pichincha, Ecuador with 51% of the population being women. In 1994, the International Conference on Population Development (ICPD) recognized that “although women have a right to control their own reproduction, numerous social barriers” such as family planning services, poverty, a lack of education, and the low social status of women prevent them from taking charge.”

Materials and Methods
This study was part of a larger population based survey designed to study demographic patterns pertaining to residents of PMC. After randomly selecting 500 household within the county, we invited selected residents to participate in a 30-60 minute interview. Using a standardized questionnaire, participants were asked to provide information on monthly income, civil status, educational level, contraception use and Pap smear exams. We used SPSS 7.5 software to perform all statistical analyses.

Results
• Approximately 24% of the population surveyed were women of reproductive age. Overall, 29.8% of reproductive age women reported using contraceptives, which is much lower than the reported use of 65.8% for Ecuador as a whole.
• Marital status was an important determinant of contraceptive use among female residents of PMC.
• The three most frequently used forms of contraception among teen-aged women in PMC are oral contraceptives, intrauterine devises and tubal ligation.

• The teen pregnancy was 21.1% for residents of PMC, and this rate was comparable to the Ecuadorian national average rate of 20.3%.
• Approximately 79% of women participating in this survey reported not having received a Pap smear exam within the last year. Importantly women in stable relationships (married or living with a partner) were more than twice as likely to have received an annual Pap smear exam as compared with women not in stable relationships.

Discussion
• As 24% of the total population surveyed were within childbearing age, knowledge concerning this group is very pertinent for Pedro Moncayo so that they may begin to address any problems that may be present.
• Marital status is the strongest indicator for determining the reproductive health of child bearing age women. Women who are married or in a joint couple situation tend to have the highest percentages of contraceptive use and pap exams.
• Education level was not an important indicator of reproductive health.
• Women with primary education had a higher rate of contraceptive use and more of them had a Pap exam within the last year than women who completed secondary level education.
• Additional studies are needed to identify social, political, cultural and economic factors that contribute to the under-utilization of reproductive health services in Pedro Moncayo County.

Recommendations
Health education programs should be implemented to teach young women about appropriate forms of contraceptives; family planning; and the importance of having pap exams. Future studies should include a larger sample, comparisons between individual parishes, number of children and age groups should be compared to the variables mentioned.
Qualitative Analysis of Mental Health and the Level of Personal Satisfaction Among Women Ages 14-65 in Tocachi, Ecuador

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Introduction

This project explores the level of personal satisfaction and state of mental health of women in Tocachi, Ecuador. Comprised mostly of mestizos and some indigenous people, Tocachi is a rural village, which is located about an hour by bus outside of Quito. This project aims to answer the following questions: How do these women construct contentment; What components of their lives would they like to change; How do their experiences shape their views of their community? An alternative method of analysis of women’s health is needed to more effectively meet the needs of these female groups; and by employing a qualitative analysis better insight into their ideas can be obtained. This work aims to identify and characterize the knowledge, attributes and beliefs of women in Tocachi around mental health and personal satisfaction.

Methodology

For this study, I utilized the technique of focus group to add a qualitative aspect to the traditional quantitative and statistical method. Three focus groups were held in the dining room of el Jardín (local school and community center). The groups were divided by age (14-17; 25-40; 40+) to acquire an age based range of ideas around themes. Group one, Mujeres mayores (Elder women), consisted of five women from Tocachi and three women from the Tocachi research team. Group two, Mujeres Jovenes (Young women), consisted of three women from Tocachi and three women from the Tocachi research team. Finally, group three, Mujeres Adultas (Adult women), consisted of three women from Tocachi and three women from the Tocachi research team. At the start of each focus group, I introduced myself and the research team participants as well as explained the concept of the focus group technique. The introduction was utilized to establish a comfortable atmosphere for the participants. All conversations were recorded and a focus group guide was utilized for each meeting.

Discussion

To establish a point of comparison for level of personal satisfaction, I asked each group of women in Tocachi to outline key components a woman would need to be content. The responses varied by age group, with the most similarity arising between the elder and young women. Both of these groups highlighted health, work, love of family members and a stable economic situation. The adult women however, did not focus as intently in these more fundamental needs, but rather highlighted the need for education, self-respect and finally the realization of the women through other familial roles. I attribute part of this difference in outlook to the educational level of the adult women group. Two-thirds of the group had formal university training and professional titles. As a result, their viewpoints would be more likely to include educational objectives as a part of the concept of contentment. After establishing these ideas within each group, I then asked them to use these components to evaluate their ‘s and their peer’s current situation in Tocachi.

The level of personal satisfaction with one’s life situation did not vary extensively across focus group samples. Among all three groups, the level of personal satisfaction seemed to depend greatly on the economic situation of that particular woman. This similarity was expected due to the current economic crisis in Ecuador. Additionally, geographic location influences how people experience any state level economic condition, and this would not change in times of crisis. Much of what the women in each group stated with respect to their economic situation in Tocachi results from the crisis that the entire country is experiencing. Women in the country contend with problems as a result of changes in the economic climate under normal circumstances, and this remains the same during times of economic crisis as well. All this considered, variations were still found in other areas. For the elder women, the level of contentment seemed to vary with the amount of visits from their children who have moved away from Tocachi. Furthermore, the concept of soledad (solitude) appeared several times in the conversation. The greater the amount of soledad, the less likely the elder women were to feel content and ultimately personally satisfied. Although the women acknowledge the reality of soledad with older age, it seems to still deeply effect them. For adult women, personal satisfaction varied with type of relationship one had with her partner as well as with educational level (or her ability to change that level).

With respect to methods for coping with sadness or pena, all three groups cited different methods as well as the sources of the feelings of sadness or pena. For the elder women, pena comes mostly from lack of something, whether it be money, work or visits from their children. This group usually copes with their sadness by crying or looking for outside distractions. For example, one participant stated that she would spend more time taking care of her animalitos (little animals) in times of sadness. Solitude seems not only to be a source for lack of contentment, but also a source of deep sadness in the elder women. While the sources are not necessarily the same, the coping methods are similar for both young and adult women. The young women discuss their feelings sadness with friends or their mothers and try to find distractions to get their mind off the source of the pain. Misunderstanding or the lack of effort to understand between family members and friends seems to be the source of sadness in this group. Finally adult women named financial situations as well as familial and marital disagreements as sources of pena. Walking, reading, screaming and crying are all methods employed by this group to deal with their feelings of sadness or pena.

| Table 1: Sample Focus Group Question and Responses |
|-----------------|-----------------|
| **Question:**   | What do you think a woman should have in her life to be content? Happy? |
| **Summary of Responses:** | |
| Elder women (40+) | • Health  |
| • Work  |
| • Love and affection of children  |
| • Money to buy food  |
| Adult women (25-40) | • Work  |
| • Love and Sharing  |
| • Study and find a profession  |
| • Have children and husband  |
| • Self Respect  |
| • Respect from spouse/partner  |
| Young women (14-17) | • Health  |
| • Work  |
| • Love and understanding of family  |
| • Understanding of friends  |
| • Good economic situation  |
The Dietary Intake Pattern and Nutritional Status of Pregnant Women in Harare: An Assessment of the Relation with Low Birth Weights

Arlene N. Davis, Godfrey B. Woelk, PhD, Michelle Williams, ScD, Sarah Mudzamiri

University of Washington, Multidisciplinary International Research Training Program, University of Zimbabwe School of Medicine

Table 1: Risk of Low Birth Weight in Relation to Protein and Total Caloric Intake, Harare, Zimbabwe.

<table>
<thead>
<tr>
<th>Protein</th>
<th>LBW (N=70)</th>
<th>Non-LBW (N=428)</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ RDA of 55g/day</td>
<td>56 (84.3%)</td>
<td>130 (91.4%)</td>
<td>1.00-2.8</td>
</tr>
<tr>
<td>&lt; RDA of 55g/day</td>
<td>14 (21.4%)</td>
<td>38 (9.6%)</td>
<td>1.97 (0.89-4.28)</td>
</tr>
</tbody>
</table>

Background

- The high prevalence of low birth weight (LBW) infants (less than 2.5 kg) continues to be an important public health concern in many developing countries like Zimbabwe.
- Low birth weight infants experience a greater risk for infections, mental retardation and death than normal weight infants. In 1999, one out of every ten neonates was low birth weight in Harare, Zimbabwe.
- Numerous studies have indicated that antepartum malnutrition is an important risk factor for LBW babies. In Zimbabwe, 5% of mothers of children under five are malnourished but little nutritional assessment has been done during their pregnancies.

Objectives

We sought to 1) evaluate maternal antepartum dietary intake patterns of pregnant women in Harare; 2) determine the risk of delivering a low birth weight infant in relation to antepartum dietary intake.

Methods

- Participants were recruited from among women delivering at Parirenyatwa Hospital, during the period of April 1998 through March 1999. A total of 500 women were included in this study.
- During the labor and delivery hospital admission period, women provided consent to participate in the research. A research nurse interviewed participants and collected information concerning maternal medical and reproductive history.
- A modified food frequency questionnaire was used to elicit information pertaining to maternal regular dietary intake patterns during pregnancy. Women reported the frequency and serving size of individual food items consumed each day during the index pregnancy.
- Nutrient values were calculated using food composition tables for Zimbabwe and the Southern African Region. For this study, we focused on maternal daily consumption of total energy (kilocalories or kcal) and total protein intake (g).

Results

Demographics

- The study population is primarily Black African young women (mean age=23) from low socioeconomic backgrounds.

Prevalence of Low Birth Weight

- Approximately 14 of neonates (70/500) were low birth weight (LBW) in this population.

Dietary Intake

- Most women reported consuming 3 meals and snacks daily. Sadza (stiff white maize) is the most frequently consumed food. Figure 1 illustrates the most frequently consumed foods across the major food groups.

Table 1: Risk of Low Birth Weight in Relation to Protein and Total Caloric Intake, Harare, Zimbabwe.

<table>
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<tr>
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</tr>
</tbody>
</table>

Figure 1: Food items most frequently consumed. Given as the total number to consume each item. Percentage given in parentheses.

- The mean daily energy intake was 3225 kcal. Approximately 24% (N=48) did not meet the WHO RDA for energy during their pregnancies than normal weight infants (27.1% vs. 23.1%).
- Inadequate energy consumption during pregnancy was associated with an almost doubling in risk of LBW (odds ratio = 1.24, 95% confidence interval, 0.67-2.31; p=0.464).
- Similar results are seen for protein intake. LBW infants were more likely to have mothers who consumed diets with lower than the R.D.A. for energy during their pregnancies than normal weight infants (27.1% vs. 23.1%).
- Inadequate energy consumption during pregnancy was associated with an almost doubling in risk of LBW (odds ratio = 1.24, 95% confidence interval, 0.67-2.31; p=0.464).

Conclusion

A large number of women did not meet the WHO RDA for energy and protein consumption during pregnancies. These preliminary data suggest that protein and caloric intake deficiencies are prevalent among poor urban women in Zimbabwe; and that these deficiencies may be associated with adverse pregnancy outcomes, such as delivery of LBW infants.

Limitations and Recommendations

- The dietary intake data was subjected to recall bias of certain foods and over/under estimation of the food portions.
- Future analysis might use multiple 24 hours food recall during prenatal visits to validate the food frequency questionnaire used in our study. The use of representative food models may also help reduce inaccurate reporting of food portions.
A Comparative Study of Growth and Nutritional Status Among Children Who Work and Children Who Do Not Work, Pedro Moncayo County, Ecuador

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Introduction

Pedro Moncayo County (PMC), Ecuador is comprised of five parishes: La Esperanza, Malchingui, Tabacundo, Tocachi, and Tupigachi. Together these five parishes have an estimated total population of 28,712 and is also one of the countries with the highest poverty level. The prevalence of extreme poverty in the county is 40.1%. Consequently, the adult population looks to the younger generation to supplement their budget and the 482,459 workers between the ages of 8 and 19 years of age make up 14.2% of the economically active population. In addition to this extra burden on their already limited childlabor, the employment status of children is a major concern to the health and development of this population. The purpose of this study is to determine the level to which socioeconomic status, level of education for the head of household, and the amount of time that children work affects their nutritional and growth status.

Materials & Methods

A cross-sectional survey questionnaire was administered to a randomized sample of 473 families in 49 communities and neighborhoods throughout the five parishes of PMC. A pilot test was issued in a neighborhood of La Esperanza parish and the level of comprehension of the questions for the participants, the flow of the questionnaire overall, and the effectiveness of the questions with respect to the desired answers were all assessed. The survey consisted of questions regarding demographic information, health conditions of children, work field, income source, and work condition of children. Data on children's BMI with respect to educational level, socioeconomic status, and nutritional status among children was analyzed using SPSS 10.0 and Epi Info 2000 software.

Results

Prevalence of Below Normal BMI Values (BNBV) and Normal BMI Values (NBV)

Out of the 737 children of age (n=737) 82.1% have BNBV. The highest percentage of BNBV (44.7%) was found in the 5-10 years of age group. Males (n=291) make up 43.7% of children with BNBV and females (n=446) make up 56.3% of children with BNBV. The age group with the highest percentage, 48.8% of NBV is in children 11-15 years of age (n=18). Males (n=121) and females (n=60) is the age group make up 46.1% and 53.9% of all children with NBV, respectively.

Socioeconomic Status

In PMC, 84.7% of the households in which children live have a low income index, 6.1% have a medium income index, and 9.2% have a high income index. The highest percentage of BNBV, 77.3% (n=158), was found among the population of medium income household index. The group with the highest percentage, 43.5%, of NBV is in children 11-15 years of age (n=18). Males (n=121) and females (n=60) is the age group make up 46.1% and 53.9% of all children with NBV, respectively.

Educational Level

Children from homes whose head of household had no educational instruction experienced the highest percentage of malnutrition (85.1%), followed by children whose head of household had up to an 8th grade education level (73.5%) with a medium income index and 3.3% (n=8) with a high income index. The highest percentage of BNBV, 77.3% (n=158), was found among the population of medium income household index. The group with the highest percentage, 43.5%, of NBV is in children 11-15 years of age (n=18). Males (n=121) and females (n=60) is the age group make up 46.1% and 53.9% of all children with NBV, respectively.

Child Labor

As we did not interview any children less than five years of age who reported working, only those older than five years of age were considered for analysis. Out of 737 children older than five years of age 460 children had all the information needed for analysis and within this sample, only 71 (9.6%) reported having a job. The average hours per day children worked were 3.7±2.8 hours. This was well above legal limit of 30 hours per week established in the Work Code was exceeded by 21.0%.

Discussion and Conclusions

Of the 1,320 children surveyed, we found that the majority were malnourished regardless of their employment status. Infants were largely undernourished and many were suffering from growth retardation. We determined that the level of education for the head of household and the socioeconomic status of the household have an impact on the children's growth and nutritional status. At this time, we were unable to determine if child labor has an impact on the growth and nutritional status of children. The age at which the majority of children are being introduced into the labor force is too early to allow for proper development. However, in this study, we could not have made a difference in the malnutrition levels. Other factors such as the time of interview, the measurement tools available for our study did not allow for a detailed analysis in this area. Further studies of the impact of child labor on the health of children need to be done because if their current health status continues, the malnutrition cycle could perpetuate as these children will soon be the parents of tomorrow's infants. Additionally, the measurement tools for nutrition need to be carefully reviewed and tested before applying them to the target sample to avoid some of the limitations we had on the type of detailed analysis. In future studies, the sample size needs to be bigger in order to get a better understanding of the nutritional status and growth status among children fifteen years of age and younger.

Recommendations

Much of this data could not be collected because the person (s) of interest did not provide the information. This point could be addressed by making sure the corresponding regional presidents thoroughly explain how important it is for all family members to be present at the interviews. Due to such high levels of malnutrition in these areas, further studies of the impact of child labor on the health of children need to be done because if their current health status continues, the malnutrition cycle could perpetuate as these children will soon be the parents of tomorrow's infants. Additionally, the measurement tools for nutrition need to be carefully reviewed and tested before applying them to the target sample to avoid some of the limitations we had on the type of detailed analysis. In future studies, the sample size needs to be bigger in order to get a better understanding of the nutritional status and growth status among children fifteen years of age and younger.
AN ASSESSMENT OF THE OFFER AND DEMAND OF HEALTH SERVICES IN PEDRO MONCAYO COUNTY, ECUADOR
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Multidisciplinary International Research Training Program, University of Washington, Seattle, WA and Fundacion Cimas del Ecuador, Quito, Ecuador

BACKGROUND
Within health systems in developing countries, limited access and poor resources are of significant concern. In 1998, 45% of deaths in Pedro Moncayo County (PMC), Ecuador were attributed to unknown causes, thus highlighting the profound lack of health information needed to identify and track significant determinants of morbidity and mortality among residents of PMC.

OBJECTIVES
The goals of this study were to assess (1) to determine the retrospective morbidity experience of PMC; (2) to determine the extent to which formal and non-formal health systems are utilized in relation to family health; (3) to determine the extent to which formal and non-formal health systems are utilized in relation to the mother-infant dyad.

METHODS
A cross-sectional survey assessed the offer and demand of health services, morbidity, mortality, and factors related to the growth of children. Retrospective morbidity (based on the last 90 days), type and utilization of health service organizations (HSO), in relation to family health, the mother-infant dyad and disability were key variables of interest. The survey was administered to 470 families within the rural and urban communities of the parish of Tabacundo between the days of July 15-21, 2001.

RESULTS
Retrospective Morbidity [n=313]
The highest frequency of illness within PMC was found in Tabacundo (35.70%) and Malchingui (34.00%), followed by Tocachi (14.00%). There was no significant difference in the frequency of illness amongst La Esperanza and Tocachi (11.70%).

CONCLUSIONS
Most women sought prenatal care within formal Health Service Organizations, but chose to give birth at home with the aid of a mid-wife. This suggests that some problems within the health system may be of culturally competency rather than the offer and demand of health services.

LIMITATIONS
The sample size was not large enough to generalize the results. Because of time constraints and geographical location it was not possible to evaluate open-ended questions. Recall Bias

PUBLIC HEALTH IMPLICATIONS
Although medical services were offered at a subsidized rate, even the minimum cost of services ($0.50) maybe prohibitive for some families. Organisations such as Cimas must continue to (1) inform, educate and empower the community about health issues; (2) link people to needed personal health services and assure the provision of health care when otherwise unavailable ---Five of the Essential Public Health Services.