



MIRT 2002 ABSTRACTS

Primary Causes of Mortality and the Epidemiologic Profiles of These Diseases Among the Elderly of Pedro Moncayo County, Ecuador, from 1991 to 1999

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Objectives: The objectives of this research were (1) to determine the primary causes of mortality among the elderly members of Pedro Moncayo County (PMC) both on a county and parish level, (2) to establish an epidemiological profile of the primary causes of death between 1991 and 1999 for the county and within each parish, (3) to determine the most prevalent diseases within each of the primary causes of death, and (4) to describe the proportional mortality within five descriptive categories. **Methods:** Using the 1990 and 2001 Census for PMC (SIISE) and the vital statistics database for the county for the years 1991-1999 (INEC), proportional mortality and mortality rates of the elderly were calculated for each cause of death by parish and descriptive variable. **Results:** Primary causes of death were found to be circulatory system (37%), tumor (14%), respiratory (13%), chronic digestive system (4.6%), endocrine system/nutrition (4%) and infectious (3.4%) diseases. Over the study period, the mortality rates of circulatory system, infectious, respiratory, and endocrine system/nutritional disease decreased while the mortality rates of tumors and chronic digestive diseases increased over the nine years. **Conclusions:** With the aging in population structure, the health concerns of the elderly become increasingly important. As found in this study, there is a high prevalence of chronic degenerative diseases among the elderly of the county. In order to cure and prevent these types of conditions, it is necessary to identify risk factors leading to their development. Once these are identified, programs aimed at reducing risk factors and treating the diseases should be implemented.

Morbidity/Mortality Analysis of Hypertension and Its Risk Factors in Adults Over 30 Years Old in Pedro Moncayo County, Ecuador

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The undetected development of hypertension is a serious problem around the world, not excluding the county of Pedro Moncayo, Ecuador. Hypertension can significantly contribute to the development and progression of cardiovascular disease, the leading cause of death in the world today. Several risk factors contribute to the development of hypertension. They include age, sex, obesity, sedentary lifestyle, and smoking and drinking habits. Hopeful of establishing a base of knowledge and information about hypertension and its risk factors, this non-experimental study analyzed both mortality and morbidity data provided by Fundación Cimas del Ecuador in hope of finding some significant correlations. A total of five hundred and twenty-five cases contained systolic and diastolic blood pressure data. Results showed that there is about an 18% prevalence of hypertension in Pedro Moncayo. The differences in the mean age of non-hypertensive and hypertensive populations was statistically significant ($p < 0.05$). All other correlative tests, however, showed no statistical significance ($p > 0.05$). A large quantity of missing and inconsistent information leaves doubt as to the implications of the statistical tests, and it is obvious that more specific and consistent data collection along with programs of education in control and prevention of hypertension are necessary for the betterment of the health of Pedro Moncayo.

Incidence of Mortality due to Infectious and Respiratory Diseases in Pedro Moncayo County, Ecuador, 1991-1999.

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Objectives: to identify (1) distribution of mortality rates due to infectious and respiratory diseases in the five parishes of Pedro Moncayo County (PMC). (2) how the different age groups were affected by infectious and respiratory diseases in the county. (3) Impact of infectious and respiratory diseases on each gender in county. (4) most prevalent infectious and respiratory diseases which count for incidences of mortality in the county.

Method: Descriptive statistical analysis was conducted by using Vital Statistics database provided by INEC and population census provided by SIISE for PMC, Ecuador, during 1991-1999 period. Using these databases a variety of mortality rates were calculated with different variables in order to identify the at risk populations in PMC due to infectious and respiratory diseases.

Results: (1) Highest average (Mortality Rate) MR ($M=2.01$) due to infectious diseases during 1991-1999 period was among the 0-5 years age group. (2) Highest MR ($M=9.5$) due to respiratory diseases during 1991-1999 period was among the >65years age group. (3) Males of PMC had the highest MR ($M=8.9$) due to infectious diseases and also the highest MR ($M=17.4$) in respiratory diseases (4) Intestinal infections were the most common specific cause within the infectious diseases category and pneumonia and influenza were the most common specific cause within the respiratory diseases.

Conclusion: In PMC children (0-5) and elderly (>65) are at high risk of dying due to respiratory and infectious diseases. Access to health care for these two populations must be improved within each parish. Causes of specific respiratory and infectious diseases must be investigated and prevention programs should be implemented within PMC.

Informed Consent: Challenges in the Application of the American Standard When Using the Quichua Population of the Andes as Subjects.

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Cultural differences between developed and developing countries often create barriers in the application of Western medicine and the implementation of ethical guidelines such as informed consent. Institutional Review Boards (IRBs) and other bioethic review panels commonly resist to deviate from the Western approach to obtaining consensual participation of subjects. This has been the topic of vigorous discussions and the frustration of many international researchers who find themselves caught between the generally inflexible regulations and cultural idiosyncrasies of the targeted population.

American researchers face strong cultural barriers when working with the Quichua population of the Ecuadorian Andes. These differences were analyzed in this paper to identify the impediments they present to the application of informed consent by American institutions. The analysis was conducted by incorporating some level of Ethical Relativism so as to find a meeting point in which the rights of the subjects are protected without disrespecting their belief system. In order to understand the insights of the Quichua culture, three interviews to experienced researchers were conducted and that information, together with personal observations, was used in the identification of culturally problematic issues. Recommendations are made for the Ecuadorian authorities and American IRBs that would better protect the wellbeing of these people.

The Effects of Maternal Health, Standards of Living, and Access to Health Care on Neonatal Mortality in Pedro Moncayo, Ecuador, 1991-2001

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Neonatal mortality in Ecuador has moderately decreased from 11.7 deaths for every 1000 live births in 1991 to 9.0 deaths for every 1000 live births in 1998³. In 1998, it was computed that 10.1 deaths out of every 1000 that are born occur within 28 days of birth³. Being that Ecuador is a developing country, the thought that much of these mortality rates could be attributed to the lack of medical resources is the first idea that comes to mind. For example, the county of Pedro Moncayo with a population of 25,544 people does not count with the facility of a hospital. Although ambulatory health services were implemented in this county during the 1960's as a consequence of the growing prosperity of the Ecuadorian economy with the discovery of oil, these medical sub-centres also faced an economic crisis in 1982 with the plummet of the oil industry⁵. When the implementation of the foreign debt took priority over other necessities such as the budgets of the ministry of health not only did the population begin to lack nourishment, housing, education, and other services, but health in general become impoverished. Unfortunately, this depression is still reflected in the quality and availability of medical services in the county today. As of 1998, the county of Pedro Moncayo relies on an average of 6.2 physicians and only 1.1 obstetricians for every 10,000 residents³.

The present study is a part of a larger investigation that seeks to evaluate the deficiencies of the medical system and the economic grades in the county of Pedro Moncayo. These deficiencies are well reflected in the health, or better stated, the lack of health of the community members. In particular, this study focuses on the resulting mortality of the neonatal population as a consequence of the scarcity of medical attention of the mother and the lack of monetary resources that unfortunately are the conduit to education and better conditions of living.

The incidence, trends, and risk factors of malignant neoplasm: an oncological continuum of the epidemiological surveillance in the Pedro Moncayo County, Ecuador

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Ecuador is a third world country facing the harsh realities of the debt-burden incurred during its petroleum boom. Many variables are affected by this debt, one being the health-care services. The health-care services of the country are not receiving the proper amount of assistance from the government. This, in turn, creates a country that is in great need of public-health assistance.

This study is to continue the epidemiological surveillance for the Pedro Moncayo County, Ecuador--specifically, oncological study. However, only some aspects of analyses have been conducted---the establishment of trends, frequency, crossing of variables to establish possible risk factors, and the study of pesticide use in the Pedro Moncayo County (in relation to tumor development). Much more research analyses should be conducted in order to provide Pedro Moncayo County with the proper public-health assistance.

The results of this study shows that the top 4 causes of cancer in the Pedro Moncayo County are tumors of the stomach, cervix, liver, and uterus. It also shows that those who are over 65 year of age, especially females, are at a higher risk of developing a malignant tumor. However, trends cannot be concluded due to the statistical instability of the mortality rates---due to the little amount of cases.

Future recommendations for this study include analyses of both morbidity and mortality data, due to possible bias nature of malignant tumor bypasses, or procedures of this sort.

Identification of the Highest at Risk areas in Pedro Moncayo County related to Maternal Health and Use of Health Services in a population of women between ages 15-49, July-August 2002

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Objectives: To identify the highest at risk population of women ages 15-49 related to maternal health and access to health services in PedroMoncayo County (PMC), Ecuador.

Methods: The cross-sectional survey used, was administered by 2001 Multidisciplinary International Research Training (MIRT) fellows in 2001 to 477 families with 570 women ages 15-49 out of a total population of 2447 people, making the women of this study 23% of the total population. The survey entailed opinions of community members in relation to basic social variables as well as the offer and demand of health services.

Results: The majority of women use public hospitals (41%) for birthing location although they must travel several kilometers outside the county, leaving the community clinic used by only 1% of women. The public hospitals also appear to have the highest percent of women having complications during their pregnancy. At home births account for 35% of the women, and also report having a relatively low percent of complications (26%). The percent distributions of pregnancies, abortions, complications, use of birth control, and PAP examinations were established between parishes.

Discussion: The parish with the highest risk for maternal health in relation with the variables used for the study, Tupigachi, also has the highest percent of indigenous people in the county. Cultural beliefs and distance from county seat could be factors affecting the risk to women, and more research and local medical attention should be focused on this parish.

Assessment of the Ten Most Important Causes of Mortality and Health Trends among Men and Women in Pedro Moncayo County, Ecuador: 1991-1999

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Background: Pedro Moncayo County, classified as a rural sierra, has population can be described as 52% rural and 48% urban. The primary source of income for residents comes from flower plantations. 30% of the flower industries do not have the proper technologies to handle the contamination problem and as a result, there has been an increase in the percentage of deaths in this county due to unknown causes.

Objectives: The objectives of this study are the following: 1) To identify the most important causes of mortality in Pedro Moncayo County, 2) To determine how the incidence of mortality relates to specific age groups and gender, and 3) to establish significant trends will be analyzed for the most important causes of mortality.

Methods: This is a descriptive/secondary analysis of mortality in Pedro Moncayo County for the years 1991-1999. 772 cases of mortality (of a total 1482) accounted for the top ten causes of death in Pedro Moncayo from 1991-1999. The mortality rates were calculated using Microsoft® Excel 2002 SP-1 throughout this study.

Conclusion: The results indicate that cardiovascular disease is ranked first followed by pneumonia and influenza. Cardiovascular disease killed more people in each of the parishes compared to the other main causes of death in the county. The lack of knowledge of various health risks may contribute to the high mortality rates seen in Pedro Moncayo County. Therefore, establishment of life-style modification programs will be beneficial.

**Social and Housing Environmental Risk Factors Influencing The Mortality of
Infants under One Year of Age due to Respiratory Infections in Pedro Moncayo
County, Ecuador. June – August 2002**

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Respiratory infections are the most common diseases that have a big and important impact on children everywhere, especially in the developing countries. We did a case–descriptive study to establish social and housing environmental conditions influencing the deaths of 104 infants under one year of age, over a period of nine years (1991-1999), in the five parishes of Pedro Moncayo County (PMC). Six main respiratory diseases were found to be the causes of mortality of these 104 (22.22 per 1,000) infants, of 4,681 births within the five parishes. Pneumonia, laryngitis & tracheitis, chronic obstructive pulmonary diseases, acute bronchitis & bronchiolitis and influenza, respectively. Their proportional cases go as follow: 51 cases (49.04%), 30 cases (28.85%), 9 cases (8.65%), 7 cases (6.73%), 4 cases (3.85%) and lastly, 3 cases (2.89%). Moreover, among the five parishes, Tupigachi, Tabacundo, La Esperanza, Malchingui and Tocachi, we found that the rate distribution of these diseases were higher in La Esperanza, followed by Tupigachi, Tabacundo, Malchingui and Tocachi, in that order. Correspondingly, their rates were, (63.20 per 1,000), (59.81 per 1,000), (16.35 per 1,000), (9.62 per 1,000) and (1.92 per 1,000). We established the influence of work and housing conditions by using the One Way ANOVA and Post Hoc Multiple Analysis using the Bonoferoni Method. As a result, we found possible risk factors associated with certain housing conditions such as; the materials the walls, the floors were made of, the type of fuel used to cook with, and the disposal of the garbage. Furthermore, we found that conditions such as; the locations used as a kitchen, the materials the roofs are made of and the types of activities done for instance, risky floral activities and non-risky floral activities all, were found to have no potential risk factors in aggravating the conditions of respiratory infections in infants under 1 year of age among each parish.

Cross-sectional Study of Opportunity to Health Care Services and Living Conditions for Indigenous vs. Mestizo Population in Pedro Moncayo County, Ecuador

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Pedro Moncayo is located in the Pichincha Province, which is located in the North orient part of Ecuador. The population is 26,700 in the county 52% live in urban zones, and the 48% in the rural zones. The biggest of the five parishes in Pedro Moncayo is Tabacundo, which has 37.5% of the population, and 62.5% reside in Tupigachi, La Esperansa, Malchingui, and Tocachi. In this county the majority of the habitants are Mestizo, which largely live in urban parts of the county. The majority of the rural areas are inhabited by the indigenous groups, of which a high percentage live an agricultural life which is a traditional part of their lives. In the Pedro Moncayo county alone 36.62% live below poverty lines and social growth is marked at 71.82%⁴.

This is a cross sectional survey sampling research, using a survey/questionnaire on opinions of community members. The title of this survey/questionnaire is (Demographic Study, on Offer and Demand of Health Services) conducted in July of 2001 in the Pedro Moncayo County. The variables analyzed were chosen from this survey and broken down into two groups, which are the indigenous populations and Mestizo population. The sixteen variables and ten significant variables were analyzed in terms of these two ethnic groups and how they were directly or indirectly affected by them. The survey was given to 49 communities and 477 families, out of these only 158 said they were indigenous and 319 said they were Mestizos. SPSS 11.0 for Windows was used for statistical analysis of the data. The data was analyzed using frequencies and crosstabulation tables. As the results illustrate, there was a significant difference between the two groups: indigenous versus mestizo. The indigenous population was at a disadvantage when it came to living conditions. The indigenous population has a grave problem with living conditions as they have a higher rate of inadequate sanitary services, and proper floor material.

Analysis of the Epidemiological Transition in Pedro Moncayo County, Ecuador, 1991-1999

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The aim of this project was to identify and analyze the epidemiological transition in Pedro Moncayo County. Ecuador is an interesting case because of the amount large foreign debt accumulated since the discovery of oil in the 70's, and its most recent push towards decentralizing the government. Another interesting fact to consider is the flower plantation located within the county that employs many of the able-bodied individuals. The majority of the people living in the county also do not have access to social services such as potable water and institutionalized physicians. So the question becomes how have these events and lack of social services effect the epidemiological transition within the county and which age group are affecting these trends. Using mortality data and data collected from a survey developed by 2001 MIRT students we were able to determine the epidemiological transition. Every disease was categorized into either chronic or infectious and age groups were created that would allow us to interpret trends by age groups and by parrish. We found that overall infectious diseases within the county are decreasing, but age group 4 (>65 years) contributes largely to this infectious trend as did age group 1 (0-5 years) and that the majority of the infectious diseases for age group 4 were respiratory infectious diseases. With respect to chronic diseases by age groups, age group 4 had the highest rates of chronic diseases, but this trends remained constant (rate 37). Overall the entire county had a decreasing trend for chronic rates for the nine year period. By analyzing trends for chronic and infectious we found that both chronic and infectious are decreasing for the entire county, which is interesting looking at the social situation in the county and Pedro Moncayo county has its own variation of the epidemiological transition. Further work definitely needs to be done in preventing both chronic and infectious diseases in age group 4.