International Journal of Collaborative Research on Internal Medicine & Public Health
Vol. 1 No. 6 & 7 (August & September 2009)
pp. 167-185

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International Journal of Collaborative Research on Internal Medicine & Public Health
Vol. 1 No. 6 & 7 (August & September 2009)
Pages 167-185

ISSN 1840-4529

http://www.iomcworld.com/ijcrimph/

Paper review summary:
Paper submission date: June 13, 2009
Paper acceptance date: September 26, 2009
Paper publication date: September 30, 2009

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pp. 167-185

Health status and Medical Care-Seeking Behaviour of the poorest 20% in Jamaica

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Abstract

Background and Objectives: Data for the last 2-decades (1988-2007) in Jamaica have shown a gradual decline in the percentage of people in the lowest 20th income quintile category. Despite this reality, statistics from WHO for 2005 revealed that 80 percent of chronic diseases are in low-to-middle income nations. Poverty is undoubtedly correlated with ill-health; but no study has ever been done in the Caribbean in particular Jamaica that examines health status, health care-seeking behaviour, health insurance coverage and the typology of illness influencing those people in the poorest categorization. This study bridges the gap in the literature by evaluating how recurring illness influences the poorest, health status and health care-seeking behaviour of this group as well as ascertaining factors that account for their good health status and medical care-seeking behaviour.

Methods: Data from the Jamaica Survey of Living Conditions (JSLC) for 2007 commissioned by the Planning Institute of Jamaica and the Statistical Institute of Jamaica were used to provide the analyses for this study. The sample for this study was 1,343 respondents who are classified as receiving 20th lowest percentile of the income in Jamaica (or the poorest 20%). Descriptive statistics were used to provide background information on the sample; Chi-square and F-statistic were used for bivariate analyses and logistic regression was performed to determine the factors for the model. Data was stored, retrieved and processed using SPSS for windows 16.0 and a 5 percent level of significance was used to test significance.

Results: The sample was 1,343 respondents (671 males and 672 females). Majority of the sample did not have health insurance coverage (93.2%) compared to 5.6% with public coverage and 1.2% private. A substantial percentage of the sample had at most basic schooling (71.5%); 17.5% primary or preparatory; 10.6% secondary and 0.4% tertiary. Only 14.7% of respondents indicated that they had an illness. Of those who indicated an illness, 93.2% of them reported that this was diagnosed by a medical practitioner. The self-reported diagnosed ailments were asthma, 11.9%; hypertension, 24.2%; arthritis, 7.7%; diabetes mellitus, 10.8%; diarrhoea, 1.5%; influenza, 13.4% and 24.2% did not specify. Four variables emerged as statistically significant correlates of good health status. These are age (OR = 0.956, 95% CI = 0.945 – 0.968); illness (OR = 0.125, 95% CI = 0.085 – 0.185); male (OR = 1.543, 95% CI = 1.107 – 2.151) and per capita consumption (OR = 1.152, 95% CI = 0.741 – 1.790). The model (good health status) had statistically predictive power [χ^2 (df = 10) = 354.269, $p < 0.001$]; Hosmer and Lemeshow goodness of fit χ^2= 6.086, P = 0.638, correctly classify 85.4% of the sample (correctly classified 96.1% of those who had good

health status and 45.3% of those who had poor health status). The model (i.e. independent variables) can explain 38% (Nagelkerke R^2) of the variability in good health status of the sample.

Conclusion: The thrust to reducing poverty in developing countries in particular Jamaica must be coupled with lifestyle behavioural modification programmes for the poorest 20% along with multi-dimensional approach to health, perception of health and treatment among this cohort.

Keywords: Health, Health status, Poorest 20%, Medical care-seeking behaviour

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Introduction

Poverty which incapacitates an individual (Sen, 1979) and accounts for some typology of chronic illnesses (WHO, 2005) has drastically fallen in Jamaica from 19.9% in 1997 to 9.9% in 2007. Despite the significant reduction in national poverty in Jamaica, in 2007, 15.3% of rural residents were living in poverty compared to 6.2% of urban and 4.0% of semi-urban Jamaicans (Planning Institute of Jamaica and Statistical Institute of Jamaica, 2008). Globally statistics on poverty for 2007 revealed that 5.3% of Jamaicans were in the poorest 20% compared to 10.6% for Japan and 5.4% for the United States (UNDP, 2007). Concomitantly, since the 1900s poverty has been reducing in the world and in particular the Caribbean (Ahmed and Wiesmann, 2007; UNDP, 2006, 2007; World Bank, 2007), but it should be noted that this is synonymous with increased chronic conditions.

Statistics from the WHO (2005) revealed that 80% of deaths due to chronic diseases occurred in low and middle income countries and in the next decade, these will increase by 17%, suggesting that the burden of illnesses will erode the health expenditure of poor individuals, families, communities and the developing nations in which they reside. Poverty is not only associated with low education (Oxaal, 1997; Younger, 2002), poor milieu, low choices and worse health (Marmot, 2002; WHO, 2005), but it is the equally correlated with the depletion of valuable human capital. When poverty is coupled with social exclusion, it increases the risk of more chronic diseases and which can result in complications and premature deaths.

Poverty constitutes the poor and poorest, and through extensive examination of the Caribbean literature in particular Jamaica, the latter group is absent from the discourse as to what explains their health status. Using health indicators such as child mortality, life expectancy and under-nutrition for Jamaicans, it may appear that there is no need to examine the poorest health status as those indicators are highly comparable to many developing nations. In Jamaica, statistics revealed that in 1997, 11.0% of the poorest reported illness in the four-week period of the survey and 2-decades later, the figure increased by 35% (to 15.0). In addition to the aforementioned, there is no information on what determines current good health status of this cohort. The 20th lowest income categorization (or poorest) in Jamaica (ie those who received 20 percent of the income) has been over looked in health statistics discourse. Within the perspective that 80% of chronic diseases are in low-to-middle income countries, this is sufficient reason to examine health status and medical care seeking behaviour of the poorest 20% as this will aid in the planning process.

The poverty discourse cannot be left to income inequality. Income inequality in Jamaica is vast; according to Ventura (2004), 20 percent of the population accounts for 50 percent of the national consumption. While it is undeniably the case that income mal-distribution and deprivation account for health conditions, singly examining those phenomena do not account for the rationale of predictors of health status of the poorest in any geographic area in the Caribbean or in Jamaica.

The current study will bridge the gap in the literature, by examining the socio-economic and medical characteristics of the 20th lowest income categorization in Jamaica. In addition, another objective is to examine variables that are correlated with the current health status of the poorest 20%. The model will provide socio-economic and biological correlates of current good health status; their contribution to the overall model and assist in understanding estimators of the health status of those in the poorest 20 percent categorization in Jamaica.

Methods

Sample and respondents

Data from the Jamaica Survey of Livings Conditions (JSLC) for 2007 commissioned by the Planning Institute of Jamaica and the Statistical Institute of Jamaica were used to provide the analyses for this study. These two organizations are responsible for planning, data collection and policy guideline for Jamaica, and have been conducting the JSLC annually since 1989. The cross-sectional survey was conducted between May and August 2007 from the 14 parishes across Jamaica and included 6,782 people of all ages. The sample for this study was 1,343 respondents who are classified as the poorest 20 percent in Jamaica (or the poorest).

The JSLC used stratified random probability sampling technique to drawn the original sample of respondents, with a non-response rate of 26.2%. The JSLC survey was based on a complex design with multiple stratifications to ensure that it represents the population; marital status; area of residence; and social class. The sample was weighted to reflect the population.

The instrument used by the JSLC was an administered questionnaire where respondents are asked to recall detailed information on particular activities. The questionnaire was modeled from the World Bank's Living Standards Measurement Study (LSMS) household survey. There are some modifications to the LSMS, as JSLC is more focused on policy impacts. The questionnaire covers demographic variables, health, immunization of children 0–59 months, education, daily expenses, non-food consumption expenditure, housing conditions, inventory of durable goods and social assistance. Interviewers were trained to collect data from household members. The sample for this study was 1,343 respondents who are classified as receiving 20^{th} percentile of the income in Jamaica (or the poorest 20%).

Statistical Analysis

Data was stored, retrieved and processed using SPSS for windows 16.0 and a 5 percent level of significance was used to test significance (ie 95% confidence interval). Descriptive statistics were used to provide background information on the sample; chi-square and F-statistic were used for bivariate analyses and logistic regression was performed to determine the factors for the model. Using logistic regression, the forward stepwise technique was used to estimate the association coefficient of each significant independent variable on the dependent variable. Odds Ratio (OR) was used to interpret each significant variable as well as the association coefficient.

The predictive power of the model was tested using the Omnibus Test of Model and Hosmer & Lemeshow (2000) to examine goodness of fit. The association matrix was examined in order to ascertain whether auto-correlation (or multicollinearity) existed between variables. Based on Cohen & Holliday (1982) association can be low (weak) - from 0 to 0.39; moderate – 0.4-0.69, and strong – 0.7-1.0 (Cohen, 1988; Cohen, et al., 2003). This was used to exclude (or allow) a variable in the model. In addition, variables were excluded from the model if they had in excess of 20% of the cases missing. Marital status was omitted from being tested in the model as it had 40% of non-responses.

Models

Multivariate analyses have been used in the past to model health status (Grossman, 1972; Smith and Kington 1997; Hambleton et al. 2005; Bourne, 2008a, 2008b; Bourne and McGrowder, 2009; Bourne, 2009), and this approach is in keeping with the social determinants which has been emphasized by the World Health Organization (2008) and

others (Solar & Irwin, 2005; Graham, 2004; Marmot, 2003; Kelly et al., 2007). The use of multivariate analysis captures more variables, and so this study modified the works of aforementioned scholars. Importantly, a fundamental difference of the current work and that of Grossman; Smith and Kington; Hambleton et al; Bourne, and Bourne and McGrowder is that it is cohort-specific (ie it focused on those in the 20th income quintile). The proposed model that this research seeks to evaluate is displayed (Eqn 1):

$$H_t = f(A_i, I_i, ED_i, HI_i, AR_i, X, HH_i, C_i, \varepsilon_i) \quad 1$$

The variables identified in Eqn [1] were based on the literature. Using the principle of parsimony, only those explanatory variables that are statistically significant ($p < 0.05$) were used in the final model to predict good health status of poorest (i.e. those who received 20th percentile of the income) in Jamaica. Hence, the predictive model of the current work is (Eqn 2).

$$H_t = f(A_i, I_i, X, C_i, \varepsilon_i) \quad 2$$

Current good health status of the poorest Jamaicans, H_t, is a function of 4 explanatory variables: where H_t is current good health status of person i, if good or above; X_i is the gender of person i, 1 if male, 0 if female; age of respondent i, A_i; per capita consumption expenditure of person i, C_i; and illness (1 if person I has one or more illness, 0 if no).

Measurement of variable
Selected variables from the JSLC were chosen to represent dependent and independent variables for this study. Measurement of dependent and independent variables used in this research are explained below.

Dependent variable
Self-rated health status: is measured using people's self-rate of their overall health status (Kahneman, & Riis, 2005), which ranges from excellent to poor health status. The question that was asked in survey was "How is your health in general?" And the options were very good; good; fair; poor and very poor. For the purpose of the model in this study, self-rated health was coded as a binary variable (1= good and fair 0 = Otherwise) (Finnas, et al., 2008; Helasoja, et al., 2006; Molarius et al., 2006; Leinsalu, 2002; Idler, & Benjamin, 1997; Idler & Kasl, 1995)

Independent variables
Age is a continuous variable which is the number of years alive since birth (using last birthday)
Age group is a non-binary measure: children (ages less than 15 years); young adults (ages 15 to 30 years); other-aged adults (ages 31 to 59 years); young elderly (ages 60 to 74 years); old elderly (ages 75 to 84 years) and oldest elderly (ages 85 years and older).
Self-reported illness (or self-reported dysfunction): The question was asked: "Is this a diagnosed recurring illness?" The answering options are: Yes, Influenza; Yes, Diarrhoea; Yes, Asthma; Yes, Diabetes; Yes, Hypertension; Yes, Arthritis; Yes, Other; and No. A binary

variable was later created from this construct (1= yes, 0 = otherwise) in order to be applied in the logistic regression.
Medical care-seeking behaviour was taken from the question 'Has a health care practitioner, or pharmacist being visited in the last 4 weeks?' with there being two options Yes or No. Medical care-seeking behaviour therefore was coded as a binary measure where 1= Yes and 0 = otherwise.

Crowding is the total number of individuals in the household divided by the number of rooms (excluding kitchen, verandah and bathroom). Age is a continuous variable in years.

Sex. This is a binary variable where 1= male and 0 = otherwise.

Results

Socio-demographic characteristic of the sample

The sample was 1,343 respondents: 671 males and 672 females. Majority of the sample did not have health insurance coverage (93.2%, n = 1,201) compared to 5.6% (n = 72) with public coverage and 1.2% private (n = 12). Fifty-eight percent of the sample answered the marital status question (n = 773). Of those who indicated a marital status, seventy-three percent were never married, 19.8% married, 5.6% widowed, 1.2% legally separated and 0.5% legally divorced. Approximately 41% (n = 546) of the sample was children, 24.3% (n = 326) young adults; 22.8% (306) other aged-adults; and 12.3% (n = 165) elderly (8.1% young elderly; 3.4% old elderly and 0.8% oldest elderly). For those who answered the education question, the response rate was 97.9% (n = 1,315). A substantial percentage of the valid sample (n = 1,315) had at most basic schooling (71.5%) compared to 17.5% primary or preparatory; 10.6% secondary and 0.4% tertiary. Only 14.7% (n = 194) of the respondents indicated that they had an illness. Of those who reported having an illness, 93.8% indicated that this was diagnosed by a medical practitioner. The self-reported diagnosed illnesses were asthma, 11.9%, n=23; hypertension, 24.2%, n = 47; arthritis, 7.7%, n=15; diabetes mellitus, 10.8%, n = 21; influenza, 13.4%, n=26; diarrhoea, 1.5%, n = 3 and unspecified condition, 24.2%, n=47. When the respondents were asked about their health status, 96.8% responded (n = 1,300). The self-rated health status responses were 32.9% indicated very good; 46.4% good; 13.0% fair; 6.6% poor and 1.1% reported very poor. When the respondents were asked 'has a doctor, nurse, pharmacist, midwife, healer or other health practitioner been visited? 14.3% of the sample responded (n=192). Marginally more of those who responded to having visited medical practitioner in the 4-week period of the survey indicated "yes" (54.7%); 53.5% revealed that they purchased the prescribed medication and 30.8% indicated that they did not buy the prescribed medicines. The median amount spent on medical care was US $3.72 (1 US$ = Ja. 80.47); 25th percentile spent US $1.24; the 50th percentile spent US $3.72 and the 75th percentile used US $12.43. In addition, the mean per capita consumption per day for the sample was US $1.80 (SD = US $0.48).
Table 1 showed bivariate relationships between variables. There was a statistical association between the purchase of medication and area of residence Table 1; ($p < 0.05$). Continuing, urban poor were the mostly likely to purchase the prescribed medication (66.3%) compared to rural poor (62.9%) and semi-urban poor (61.0% ; $p < 0.05$. The least mean amount spent for daily consumption per person was by rural respondents (US $1.77 ± US $0.48) compared to urban (US $1.91 ± US $0.48) and US $2.07 ± US $0.48 by semi-urban respondents ($p< 0.05$). Furthermore, the findings revealed a significant statistical difference between the mean

number of persons per room in the different areas of residence: households in urban areas have significantly more persons per room (7 ± 4) compared to rural areas (6 ± 3) and semi-urban households (5 ± 2). However, there was no significant statistical difference in the amount spent on medical care by the area of residence ($p > 0.05$; Table 1).

Based on Table 2, there was a statistical association between self-rated health status and self-reported illness (χ^2 (df = 4) = 265.716, $p < 0.001$). Only 7.9% of those who revealed that they had at least one illness indicated very good health status compared to 37.3% of those who did not report an ailment. Twenty-four percent of those with at least one illness reported poor health status compared to 3.5% of those who did not indicate a dysfunction. Furthermore, there was a negative statistical association between self-rated health status and self-reported, with the association being also a moderate one (contingency coefficient = 0.413 or 41.3%).

Fifty-five percent of respondents indicated that they sought medical, and there was no significant statistical difference between medical care-seeking behaviour and gender of respondents ($p = 0.250$): 49.3% of males and 57.9% of females.

Figure 1 displayed the percentage of sample that sought medical care by particular self-reported diagnosed recurring illnesses. Of those who had asthma 59.1% sought medical care; 61.9% of those with diabetes mellitus; 56.5% of those with hypertension; 40% of those with arthritis and 50% of those with unspecified conditions.

When the respondents were asked 'Why did they not seek care?' the reasons included could not afford it (33%); 35% reported that they were not 'ill' enough, 12% used home remedy1% indicated that they did not have the time and 19% did not specify (Figure 2).

Table 3 showed a cross-tabulation between self-reported illnesses and age group of respondents. Based on Table 3, there was a statistical association between self-reported illness and age group ($p < 0.001$). Young adults were the least likely to report an illness (7.3%); and children were more likely to report an illness than young adults. The findings revealed that as people become older, they were more likely to report an illness. However, the old-elderly reported more ailments than the other elderly. In fact the old-elderly who reported are the most likely ones to indicate having a dysfunction: sixty-two percent of old elderly reported an illness compared to 46% of oldest-elderly, 32% of young elderly.

Table 4 displayed a cross tabulation between self-reported diagnosed recurring illnesses and age group of respondents. The cross tabulation between self-reported diagnosed recurring illnesses and age group revealed a statistical association ($p < 0.001$). The findings revealed that as the sample becomes older, the typology of recurring illnesses change from influenza, diarrhoea and asthma to diabetes mellitus, hypertension and arthritis. Forty-nine percent of elderly had hypertension compared to 28% of other aged-adults and this was similar for arthritis (8% of other aged-adults and 17% of elderly). Although no children reported having hypertension and arthritis, approximately 2% had recurring diabetes mellitus. Diabetes mellitus and hypertension were most prevalence amongst other adults, and arthritis among elderly (Table 4).

Multivariate Analysis

Table 5 displayed selected independent and dependent variables. Using multiple logistic regression technique, four variables emerged as statistically significant predictors of good health status in this sample (Table 5): age (OR = 0.956, 95% CI = 0.945 – 0.968); illness (OR = 0.125, 95% CI = 0.085 – 0.185); gender (OR = 1.543, 95% CI = 1.107 – 2.151) and per capita consumption (OR = 1.152, 95% CI = 0.741 – 1.790).

The model (good health status) had statistically predictive power [χ^2 (df = 10) = 354.269, p < 0.001]; Hosmer and Lemeshow goodness of fit χ^2= 6.086, *P* = 0.638, and correctly classify 85.4% of the sample (correctly classified 96.1% of those who had good health status and 45.3% of those who had poor health status). The model (ie. independent variables) can explain 38% (Nagelkerke R^2) of the variability in good health status of sample. The logistic regression model can be written as: *Log (probability of good health status/probability of poor health status) = 2.075 – 0.045 (Age) – 2.077 (Illness) + 0.434 (Male) + 0.000 (per capita consumption).*

Having established those variables that are correlated with good health status of the sample, forward stepwise multiple logistic regression technique was used to determine the correlation coefficient of each significant variable. Table 6 displayed the significant statistical correlates of good health status, and their correlation coefficient. Of the thirty-eight percentage points of the independent variables that can be used to explain the dependent variable (ie good health status), illness accounted for 22.8%; age 13.2%, consumption 1.4% and gender 0.6% (Table 6).

Discussion

Infant mortality and life expectancy traditionally have been utilized to measure health status of a population; but this does not comprehensively explain the influence of poverty on an individual, family, community, or nation. Marmot (2002) argued that it is ignorant to perceive that there is no significant statistical association between poverty and health as poverty accounts for low quality housing, lack of sanitation, malnutrition, overcrowding, high infant mortality, chronic illnesses, material deprivation and lack of quality medical care. All of these increase the probability of lower standard of living and life expectancy. There is a paradox with poverty, infant mortality and life expectancy as infant mortality in Jamaica for 2007 was 17 per 1000 (UNDP, 2007) while the life expectancy was 72 years and only 5.3% of population was in the poorest 20%. Jamaica's life expectancy is high incomparable with that of the many developed nations such as United States (77.4 years) and that 5.4% of population in the United States were classified as in the poorest 20%, yet Jamaica is a developing country and the former is a developing nation. Economic indicators for each nation are vastly different; suggesting that studies in the developed world should not be widely used to formulate policies nor guide public health practices in the Caribbean or other developing nations like Jamaica.

In the current study, 8 out of every 10 respondents in the poorest 20% of the Jamaican population indicated at least good health status which is similar to rural Jamaicans (8 out of every 10; Bourne and McGrowder, 2009) and higher than that of the Jamaicans who sought medical care (5 out of every 10; Bourne, 2009b). Good health status does not mean that people are not experiencing a dysfunction. This study revealed that 15 out of every 100 of the poorest 20% of the Jamaican reported an illness, which is same for the population of Jamaicans (Planning Institute of Jamaica and Statistical Institute of Jamaica, 2008). There is a statistical significant association between health status and illness of the poorest 20%, and that 36 out of every 100 respondents who reported an illness indicated at least good health compared to 28 out of every 100 of respondents with poor health status. Furthermore, the general health status of Jamaicans across the different social standings is high and offers minimal difference. According to a cross-sectional probability survey of 1,338 Jamaicans, Powell, Bourne and Waller (2007) found that those in the lower class indicated that their 'state of health' was 5.9 out of 10 compared to 6.5 for those in the upper class and 6.6 for

those classified in the middle class. While Powell et al.'s work did not deconstruct the health conditions of the different social classes; this research offers information about this issue for those classified in the poorest 20% of the Jamaican population.

The WHO (2005) declared that chronic illnesses are associated with poverty, and this study concurs with the current findings and a study by McCally et al. (1998). The findings of the current research showed that 24 out of every 100 of the poorest 20% had hypertension, 11 out of every 100 diabetes mellitus, 8 out of every 100 arthritis and 24 out of every 100 unspecified conditions and 13 out of every 100 influenza. Comparatively, 22 out of every 100 of the Jamaican population had hypertension, 9 out of every 100 had arthritis, 12 out of every 100 diabetes mellitus and 9 out of every 100 Jamaicans had asthma. The high rates for hypertension and diabetes mellitus for the poorest 20% are reflecting their lifestyle practices. The inadequacy to afford the proper nutrients and food are responsible for those numbers; but these will be difficult to change as these people would be less likely to afford not only the correct foods but seek adequate medical care. Of the 45 out of every 100 respondents who did not seek medical care, 33 out of every 100 was because of in-affordability and 35 out of every 100 were due to 'not ill enough'. The issue of not being ill enough speaks to the poorest 20% unwillingness not only to seek medical care for all illnesses but their perception about severity of illness and that being use to measure and indicate when medical treatment should be sought. The number of people seeking medical care in Jamaica for 2007 was 66 out of every 100, which is 11% more than that for those in the poorest 20%. The poorest 20% are also not seeking medical care, but only 53 out of every 100 purchased the prescribed medication compared to 66 out of every 100 of the general population (Statistical Institute of Jamaica, 2008). The poorest 20% of Jamaicans spent a mean of US$3.72 on medical care which is 2.1 times more than their average per person consumption per day, and their medical expenditure is 7.4 times less than that for the population (US $27.58).

The capacity of this group to recover from their current socio-economic status will be difficult with assistance from government and other social networks as 89 out of every 100 of the poorest 20% had at most primary level education. The severity of this social reality can be further understood within the context that 65% of this group is less than 31 years and 41% less than 15 years. Although since 2007 user fee for medical services have been reduced for Jamaicans 18 years and younger, this does not take away the difficulty of the group to seek health care, and nutrients deficiency. Only 10 out of every 100 children were ill and out of every 100 for young adults, which means that the issues for this group is not curative care but is preventative care and the high cost for the society for curative care for this cohort when they become old (ages 60 years and beyond). This research revealed that 49 out of every 100 elderly in the poorest 20% reported hypertension which is 1.3 times more than that for the population 65 years and beyond and 1.8 times more than that for the general population, suggesting the cost of curative care for the elderly poorest 20% will be higher for the nation. It is not only the elderly poorest 20% that has greater risk of particular pathogens in Jamaican than the general elderly population or the general population, but this spread across the poorest 20% cohort.

A study by Hambleton et al. (2005) on elderly Barbadians found that current disease indicators (health conditions) accounted for 33.6% of the explanation of health status out of total explanation of 38.2% (ie R^2), indicating power of ill estimators. While the current study found that current disease indicators accounted for 22.8% of the explained variation in health status, this represented 60% of the variability compared to 52% in Hambleton et al's work. In Jamaica, with inflation having increased by 194.7% in 2007 over 2006 coupled with the

global economic downturn, this not only speak of the economic challenges of the poorest 20% but also reinforced the economic burden of this cohort on the national budget. Nugent (2008) noted that between 0.02 to 6.77% of GDP in a country is estimated to be spent on chronic illnesses, and in United States the figure is 5.0% of GDP. He continued that the treatment costs of diabetes mellitus in developing countries are estimated to be 9% of the global total.

Infectious diseases continue to be among the leading cause of premature mortality in adults in the developing countries which emphasize the choices that are made by poor in order for livelihood. This includes the poorest 20% in Jamaica who have not sought medical care although they indicated that they have particular chronic illness. It should be noted that 60 out of every 100 arthritic poorest 20% did not seek care, 44 out of every 100 hypertensive and 38 out of every 100 diabetic which are causes of premature mortality and economic burden of futuristic care and the challenges for public health in Jamaica. In an article published by CAJANUS, the prevalence rate of diabetes mellitus affecting Jamaicans is higher than in North American and "many European countries"(Callender 2000). Diabetes Mellitus is not the only challenge faced by patients, but McCarthy (2000) argued that between 30 to 60% of diabetics also suffer from depression, which is a psychiatric illness.

Poverty is considered to be the greatest cause of health inequalities between affluent and poor countries (WHO 1998); but this study has shown that the poorest 20% of Jamaicans are substantially been affected by not only poverty, low education and material deprivation but also include health conditions, and their low responses to preventative as well as curative medical care. Hence, the reality for the poorest 20% of Jamaicans is likely to be catastrophic in the future and will account for high mortality and economic burden for the society (Nugent, 2008). This is confirmed by a study conducted by McCally et al. (1998) which found that mortality rates for those in the lower class higher than that for the other social classes (Marmot 1994; Marmot et al. 1984; Marmot et al. 1991). Another study presented to the United Nations by a Caribbean scholar cited that poverty is correlated with risky sexual behaviour (Bernard, 2003) furthering exposure to disease causing pathogens and accounting for some of the HIV/AIDS cases in the Caribbean in particular Jamaica.

Consumption was found to be positively correlated with good health status for the poorest 20% which concurs with many other studies (Marmot, 2002; McCally et al. 1998; Bourne and McGrowder 2009; Smith and Kington, 1997; Grossman, 1972). With the poorest 20% being incapacitated by economic and material deprivation, another critical aspect to this study is what is embedded in their consumption pattern. Their consumption pattern will constitute of mostly innutritious items such as fatty foods and starches, which add to the reasons for the higher hypertension in this cohort than that for the population of Jamaica. Another aspect to this issue is the barrier to health care that the lack of income affords the poorest 20% from purchasing prescribed medication and an explanation for lowered visits to medical practitioners for preventative check-ups.

Among the social determinants of health status of the poorest 20% of the Jamaicans is gender. The findings indicate that men have a greater health status than women. They are 1.5 times likely to report a greater health status than females, suggesting that latter group will be experiencing greater socio-economic hardships. Females have a high propensity than males to contract particular conditions such as depression, osteoporosis and osteoarthritis (WHO, 2005; Herzog, 1989). A study that was conducted by Schoen et al. (1998) on a group of adolescents reveals something different from that which was reported by WHO. They found that males are more likely than females to feel stressed 'overwhelmed' or 'depressed', and

they attributed this to limitedness of men's social networks. Other research have agreed with Schoen et al that men in general tend to be more stressed and less healthy than females, and further argued that men can use denial, distraction, alcoholism and other social strategies to conceal their illness or disabilities (Friedman, 1991; Kopp et al. 1998; Weidner and Collins, 1993; Sutkin and Good, 1987). Males, nevertheless, are more likely to have heart diseases, gout and hypertension than women. World Health Organization attributes this biomedical condition to difference between the genders based on hormonal differentiations, social networks and support, and cultural and lifestyle practices of the sexes, this was concurred by Courtenay et al. (2002).

Conclusion

The thrust to reducing poverty in developing countries in particular Jamaica must be coupled with lifestyle behavioural modification programmes for the poorest 20% along with multi-dimensional approach to health, perception of health and treatment among this cohort. While the economic costs of treatment of chronic diseases are high, public health practitioners and governments cannot allow the poorest 20% to become ill before retarding all possibilities of futuristic delays in the seeking of medical care outside of curative measures.

Acknowledgement

The author would like to thank the Data Bank in Sir Arthur Lewis Institute of Social and Economic Studies, the University of the West Indies, Mona, Jamaica for making the dataset (Jamaica Survey of Living Conditions, 2002) available for use in this study. In addition, he would like to extend gratitude to Mrs. Cynthia Francis, Librarian in the Documentation Centre, Department of Community Health and Psychiatry, University of the West Indies, Mona, for her contribution in sourcing materials for the literature review.

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Table 1: Socio-demographic characteristics of sample

Variable	Area of residence			p-value
	Urban n (%)	Semi-Urban n (%)	Rural n (%)	
Health insurance coverage				**0.120**
No coverage	166 (90.2)	152 (91.6)	883 (94.0)	
Private	5 (2.7)	1 (0.6)	10 (1.1)	
Public	13 (7.1)	13 (7.8)	46 (4.9)	
Self-reported illness				**0.073**
No	164 (88.6)	144 (89.4)	811 (84.0)	
At least one	21 (11.4)	17 (10.6)	155 (16.0)	
Educational level				**0.000**
No formal education	107 (58.2)	103 (62.4)	512 (53.0)	
Basic	29 (15.8)	20 (12.1)	169 (17.5)	
Primary (or preparatory)	22 (12.0)	30 (18.2)	178 (18.4)	
Secondary (or high)	22 (12.0)	12 (7.3)	106 (11.0)	
Tertiary	4 (2.2)	0 (0.0)	1 (0.1)	
Gender				**0.499**
Female	97 (52.2)	77 (46.1)	498 (50.3)	
Male	89 (47.8)	90 (53.9)	492 (49.7)	
Health status				**0.001**
Very good	57 (31.0)	36 (21.7)	335 (35.3)	
Good	89 (48.4)	103 (62.0)	411 (43.3)	
Fair	25 (13.6)	20 (12.0)	124 (13.1)	
Poor	13 (7.1)	5 (3.0)	68 (7.2)	
Very poor	0 (0.0)	2 (1.2)	12 (1.3)	
Medical Care-seeking behaviour				**0.074**
Yes	190 (71.2)	119 (63.6)	349 (63.3)	
No	77 (28.2)	68 (36.4)	202 (36.4)	
Did you purchase medication				**0.021**
Yes, Prescribed	175 (66.3)	111 (61.0)	331 (62.9)	
Yes, Partial prescription	6 (2.3)	2 (1.1)	10 (1.9)	
Yes, Prescribed/Over the counter	9 (3.4)	12 (6.6)	8 (1.5)	
Over the counter	14 (5.3)	11 (6.0)	27 (5.1)	
Prescribed, but didn't buy	9 (3.4)	1 (0.5)	22 (4.2)	
Did not buy	51 (19.3)	45 (24.7)	128 (24.3)	
†**Medical cost** Mean (SD)	US $23.89 (US $93.10)	US $19.31 (US $25.63)	US $14.98 (US $38.45)	**0.236**
†**Per person Daily Consumption Expenditure** Mean (SD)	US $1.91 (US 0.48)	US$ 2.07 (US $0.48	US $1.77 (US $0.48)	< **0.001**
Crowding Mean (SD)	7.0 (4.2)	5.0 (1.8)	6.1 (2.9)	< **0.001**
Number of visits to health care practitioner Mean (SD)	1.45 (1.06)	1.42 (1.28)	1.39 (0.963)	**0.788**

†Ja $80.47 = US $1.00

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Table 2: Health status by Self-reported Illness

Health Status	Self-reported Illness		Total
	At least one	No	
	n (%)	n (%)	n (%)
Very good	15 (7.9)	412 (37.3)	427 (33.0)
Good	54 (28.4)	546 (49.4)	600 (46.3)
Fair	68 (35.8)	101 (9.1)	169 (13.1)
Poor	46 (24.2)	39 (3.5)	85 (6.6)
Very poor	7 (3.7)	7 (0.6)	14 (1.1)
Total	**190**	**1105**	**1295**

χ^2 (df =4) = 265.716, $p < 0.001$, n = 1, 295, contingency coefficient = 0.413

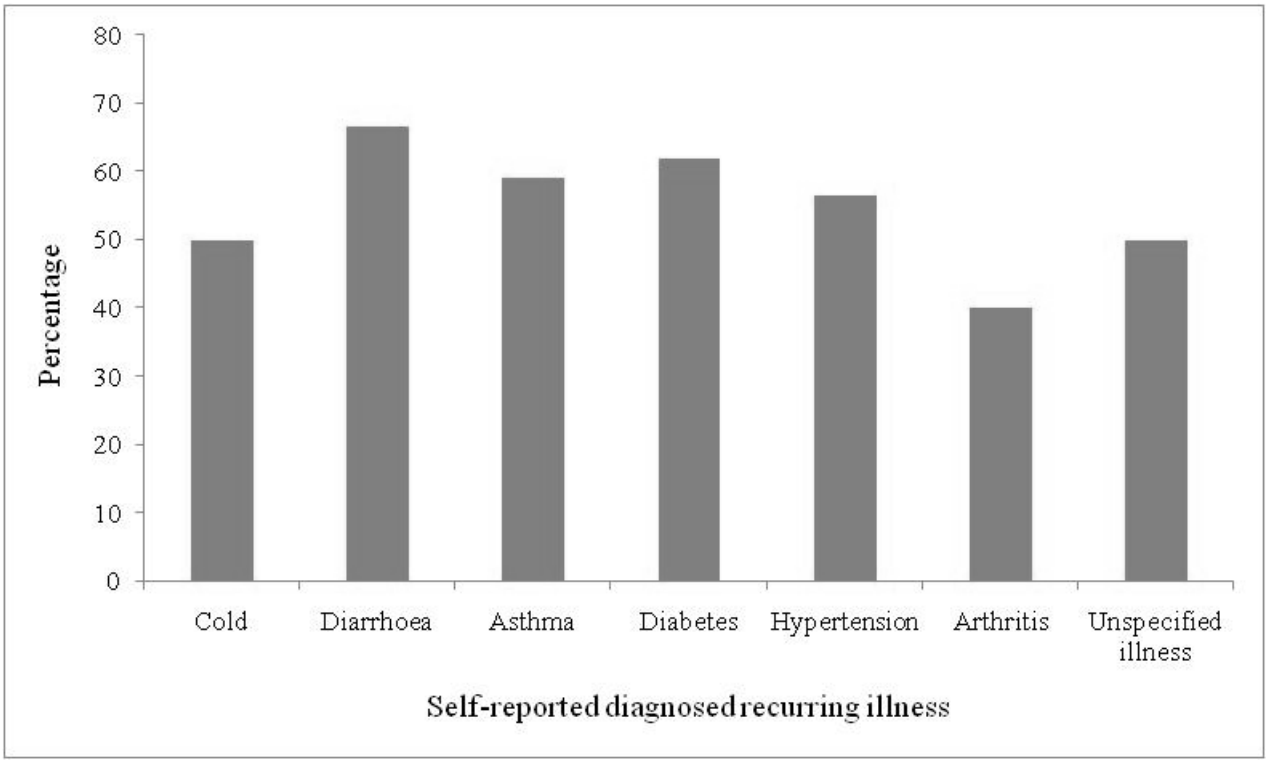

Figure 1: Percentage of sample that sought medical care by particular self-repored diagnosed recurring illness

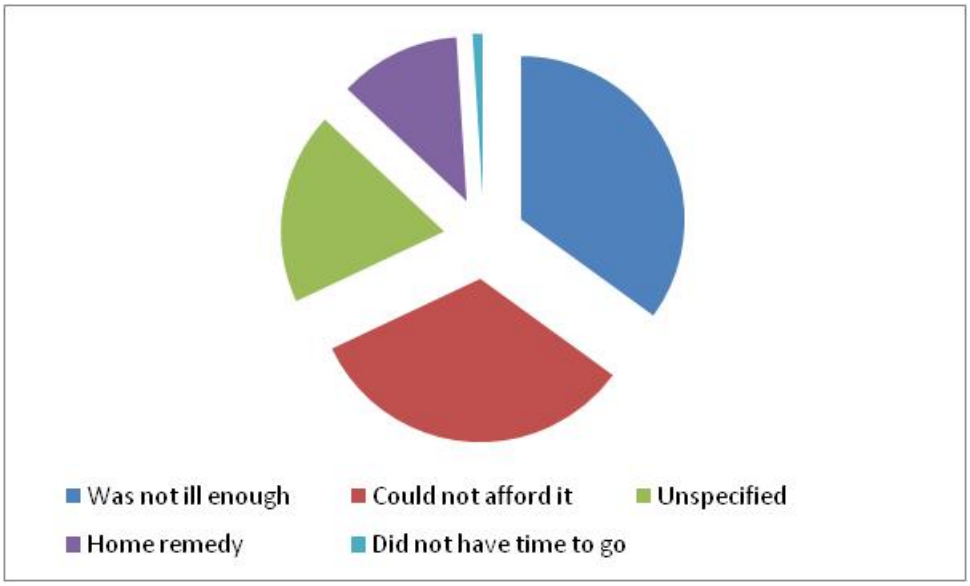

Figure 2: Reason for not seeking medical care (in %)

Table 3: Self-reported illness by age group

Self-reported illness	Age group						Total n (%)
	Children n (%)	Young adults n (%)	Other-aged adults n (%)	Young old n (%)	Old Elderly n (%)	Oldest Elderly n (%)	
Yes	53 (10.0)	23 (7.3)	51 (16.8)	35 (32.4)	26 (61.9)	5 (45.5)	193 (14.7)
No	478 (90.0)	293 (92.7)	253 (83.2)	73 (67.6)	16 (38.1)	6 (54.5)	1119 (85.3)
Total	**531**	**316**	**304**	**108**	**42**	**11**	**1312**

χ^2 (df = 5) = 134.22, $p < 0.001$, n = 1, 312

Table 4: Self-reported diagnosed recurring illness by age group

Self-reported diagnosed recurring illness	Age group				Total n (%)
	Children n (%)	Young adults n (%)	other aged-adults n (%)	Elderly n (%)	
Influenza	19 (35.8)	2 (8.0)	3 (6.0)	2 (3.0)	26 (13.4)
Diarrhoea	2 (3.8)	1 (4.0)	0 (0.0)	0 (0.0)	3 (1.5)
Asthma	12 (22.6)	3 (12.0)	5 (10.0)	3 (4.5)	23 (11.9)
Diabetes mellitus	1 (1.9)	1 (4.0)	10 (20.0)	9 (13.6)	21 (10.8)
Hypertension	0 (0.0)	1 (4.0)	14 (28.0)	32 (48.5)	47 (24.2)
Arthritis	0 (0.0)	0 (0.0)	4 (8.0)	11 (16.7)	15 (7.7)
Unspecified	15 (28.3)	12 (48.0)	12 (24.0)	8 (12.1)	47 (24.2)
Not diagnosed	4 (7.5)	5 (20.0)	2 (4.0)	1 (1.5)	12 (6.2)
Total	**53**	**25**	**50**	**66**	**194**

χ^2 (df = 21) = 116.97, $p < 0.001$, n = 194

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Table 5: Logistic Regression: Self-reported illness and socioeconomic variables on Good Health status of Poorest 20% in Jamaica

Variable	Coefficient	Std. Error	Wald statistic	Odds ratio	95.0% C.I.
Age	-0.045	0.01	56.89	0.96	0.95 - 0.97***
Illness	-2.077	0.20	107.82	0.13	0.09 -0.19***
Basic or Primary	-0.350	0.29	1.44	0.71	0.40 - 1.25
Secondary or Tertiary	-0.071	0.37	0.04	0.93	0.45 - 1.92
†No formal education					
Dummy Health insurance	-0.239	0.30	0.62	0.79	0.43 - 1.43
Urban area	-0.062	0.24	0.07	0.94	0.59 - 1.49
Other town	0.189	0.28	0.45	1.21	0.70 - 2.10
†Rural					
Male	0.434	0.17	6.54	1.54	1.11 - 2.15*
Per capita consumption	0.000	0.00	10.40	1.00	1.00 - 1.00**
Head Household	0.142	0.23	0.40	1.15	0.74 - 1.79
Constant	2.075	0.40	27.19	7.96	-

χ^2 (df = 10) = 354.269, p < 0.001, n = 1, 266
-2 Log likelihood = 950.084
Nagelkerke R^2 =0.380
Hosmer and Lemeshow goodness of fit χ^2= 6.086, P = 0.638
Overall correct classification = 85.4%
Correct classification of cases of Good Health Status = 96.1%
Correct classification of cases of Poor Health status = 45.3%
†Reference group
*P < 0.05, **P < 0.01, ***P < 0.001

Table 6: Model Summary of Estimator: Using Stepwise regression

Model	-2 Log likelihood	Nagelkerke R Square	R Square change
Illness	1103.449	0.228	0.228
Illness, Age	971.206	0.360	0.132
Illness, Age, Consumption	955.988	0.374	0.014
Illness, Age, Consumption, Male	949.578	0.380	0.006