

Socio-demographic determinants of Health care-seeking behaviour, self-reported illness and Self-evaluated Health status in Jamaica

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Abstract

The objectives of this study were to examine self-rated health status and health care-seeking behaviour of Jamaicans, and to ascertain the socio-economic determinants of health care-seeking behaviour as well as good health status. To that end, a cross-sectional descriptive study of 1,006 respondents who answered the question on health-seeking behaviour was used, and this was extracted from a larger nationally representative probability sampling survey of 6,783 Jamaicans. Descriptive statistics were used to provide background information on the demographic characteristics of the sample, chi-square was used to examine correlation between two non-metric variables, and logistic regressions were employed to establish the predictors of health care-seeking behaviour and good self-rated health status. Of the sample, 40.5% was men and 59.5% women, with a mean age of 41.8 years (SD=27.6 years).

Forty-four percent of the sample reported at least good health, 97% claimed that they have had some form of dysfunction; 6% reported being injured due to accidents, and only 11% indicated that their illness was not diagnosed by a health practitioner. Of those who indicated being diagnosed with a recurring ailment, 5.6% had arthritis, 20.5% hypertension, 12.4% diabetes mellitus, 9.5% asthma and 14.9% cold. Only 65.4% of the sample sought health care. In the multivariate analyses, health-care seeking behaviour of Jamaicans can be explained by age of respondents (OR=1.031, 95%CI=1.014, 1.049); area of residence (other towns OR=0.5, 95%CI=0.278, 0.902); log consumption (OR=3.605 95%CI=1.814, 7.167); marital status (married OR=0.468 95%CI=0.260, 0.843; divorced, separated or widowed, OR=0.383, 95% CI 0.163, 0.903) and social class (Upper class OR=0.319, 95%CI=0.106, 0.958). The health status of those who seek health care can be predicted duration of the individuals to carry out their normal activities (OR=0.594, 95%CI=0.413, 0.855); age of respondents (OR=0.967, 95%CI=0.949, 0.986) and area of residence (urban area OR=2.415, 1.195, 4.881; other towns OR=2.514, 1.162, 5.442). Self-rated health status was found to be a significant statistical predictor of self-reported dysfunction - good self-rated health status with reference to poor self-rated health status (OR=0.271, 95%CI=0.081, 0.915). This relationship disappears when socio-demographic characteristics were included. The findings of this study suggests that health service professionals need to increase awareness about the benefits of purchasing prescribed medication, and that this must be more so for rural and urban residents.

Keywords: Health, care, seeking, behaviour, health status, sociodemographic correlates, Jamaica

Introduction

The issue of health care-seeking (or medical-care) behaviour is crucible to all society. All nations rely on its human capital in the creation and pursuit of growth and/or development. The human capital is able to accomplish those desired objectives outlined by the society only on the fundamental premise that the people are in good health. Health is more than the absence of diseases and it includes social, psychological and economic wellbeing. Embedded in good health is not the least disease, as this is more in keeping with poor health. While poor and good health appears to be on the opposite end of a continuum, for this paper good health denotes the life satisfaction and general acceptance with the happenings of life. On the other hand, poor health speaks to the people's perception of a low quality of life or life satisfaction. Hence, this is in keeping with WHO's conceptualization of health in the Preamble to its Constitution in 1946 (WHO, 1948) which stated, health is not merely the absence of diseases or infirmity but it is the state of complete physical, social and psychological wellbeing.

In spite of a discussion which began in the 1940s, stating that health was a composite function that includes biological, social, psychological, environmental and economic factors (WHO, 1948), Engel (1960, 1977a, 1977b, 1978, 1980) re-ash this in the late 1950s and was able to use this in the treatment of mentally ill-patient. Prior to Engel conceptual model (i.e. Biopsychosocial model), health was conceptualized, treated and viewed from a biomedical perspective. This meant that health-care seeking behaviour was primarily based on diseases (or disease causing pathogens) and not based on preventative care. WHO and Engel recognized this uni-dimensional approach to the view and treatment of health, and expanded on this conceptual framework. Despite the contribution of the aforementioned names, health care-seeking behaviour in Western societies is still fundamentally driven by negative health (illness, or poor health) and not in keeping with the broader framework offered by the World Health Organization.

Health policy makers in the Caribbean continue to rely on biomedical approach in the collecting of information upon which they evaluate the health of the society. This is evident in how data are collected from the populace on health. Since 1988, Jamaica has been collecting statistics on illness from the general populace. The data were to be used to aid and assess government policies as well as to guide future programmes. The use of dysfunctions (or illnesses) to measure health is not accepting the multi-dimensions to humans; in recognition that health is more than diseases. It was not until 2007, that the Planning Institute of Jamaica and the Statistical Institute of Jamaica that are responsible for the collection of the data, began collecting data on self-reported health status. Those agents were involved in the collating of data on dysfunction and health-care seeking behaviour that were limited to traditional view of health (i.e. visits to health care institutions and health care practitioners; bought medication). This means that all policies were based on the narrow definition of illness on a construct that has broader negative view framework about health, which accounts for Jamaicans (Jamaica Survey of Living Conditions, 1989-2008; Ministry of Health, 2005) and by extension Caribbean peoples' willingness to visit doctors (Shaw et al., 1999).

An extensive review of health literature revealed that no study was that examine factors that account for health care-seeking behaviour of Jamaicans, as well as the sociodemographic correlates of the health status of those who sought traditional medical care. The importance of why people seek medical care is undoubtedly critical in health policy planning, and it is within this limitation that this study is timely and needed. While studies outside of Jamaica have established different determinants of health-care seeking behaviour (Grover et al., 2006;

Vu 2008; Williams et al. 2006; Stekelenburg 2005), this cannot be assumed to apply within the Jamaicans context as the culture, socio-demographic and economic characteristics are different and as such calls for an examination of this phenomenon. Hence, the objectives of this study were to examine self-rated health status and health care-seeking behaviour of Jamaicans; and to ascertain the socio-economic predictors of health care-seekers as well as to determine factors that account for good health status of those who sought health care in order aid public health policy makers and primary care physicians.

Method

The current study extracted a sample of 1,006 respondents based on those who indicated having sought health care in the 4-week period of the survey. The sample was drawn from a large nationally representative cross-sectional descriptive survey of 6,783 Jamaicans (Statistical Institute of Jamaica 2007). The survey was drawn using stratified random sampling. This design was a two-stage stratified random sampling design where there was a Primary Sampling Unit (PSU) and a selection of dwellings from the primary units. The PSU is an Enumeration District (ED), which constitutes of a minimum of 100 dwellings in rural areas and 150 in urban areas. An ED is an independent geographic unit that shares a common boundary. This means that the country was grouped into strata of equal size based on dwellings (EDs). Based on the PSUs, a listing of all the dwellings was made, and this became the sampling frame from which a Master Sample of dwelling was compiled, which in turn provided the sampling frame for the labour force. One third of the 2007 Labour Force Survey (i.e. LFS) was selected for the survey (JSLC 2007 – ie Statistical Institute of Jamaica 2007). The sample was weighted to reflect the population of the nation.

This study used JSLC (2007) which was conducted by the Statistical Institute of Jamaica (STATIN) and the Planning Institute of Jamaica (PIOJ) between May and August 2007. The researchers chose this survey based on the fact that it is the latest survey on the national population and that it has data on self-rated health status of Jamaicans. A self-administered questionnaire was used to collect the data which were stored and analyzed using SPSS for Windows 16.0 (SPSS Inc; Chicago, IL, USA). The questionnaire was modelled 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 covered areas such as socio-demographic, economic and health variables. The non-response rate for the survey was 26.2%.

Descriptive statistics, such as mean, standard deviation (SD), frequency and percentage were used to analyze the socio-demographic characteristics of the sample. Chi-square was used to examine the association between non-metric variables, and an Analysis of Variance (ANOVA) was used to test the relationships between metric and non-dichotomous categorical variables. Logistic regression examined the relationship between the dependent variable and some predisposed independent (explanatory) variables, because the dependent variable was a binary one (self-reported health status: 1 if reported good health status and 0 if poor health).

The results were presented using unstandardized B-coefficients, Wald statistics, Odds ratio and confidence interval (95% CI). The predictive power of the model was tested using the Omnibus Test of Model and Hosmer and Lemeshow (2000) to examine goodness of fit of the model. The correlation matrix was examined in order to ascertain if autocorrelation (or multicollinearity) existed between variables. Based on Cohen and Holliday (1982), correlation can be low (weak) - from 0 to 0.39; moderate – 0.4-0.69, and strong – 0.7-1.0.

This was used to exclude (or allow) a variable in the model. Wald statistics were used to determine the magnitude (or contribution) of each statistically significant variable in comparison with the others, and the Odds Ratio (OR) for the interpreting of each significant variable.

Multivariate regression framework (Asnani, 2008; Bourne, 2008a, 2008b) was utilized to assess the relative importance of various demographic, socio-economic characteristics, physical environment and psychological characteristics of the health status of Jamaicans as well as health care-seeking behaviour. Econometric analyses were also employed by other scholars in other societies (Grossman, 1972; Hambleton et al., 2005; Smith & Kington, 1997). This approach allowed for the analysis of a number of variables simultaneously. Secondly, the dependent variable is a binary dichotomous one and this statistic technique has been utilized in the past to do similar studies. Having identified the determinants of health status from previous studies, using logistic regression techniques, final models were built for women in general as well as for each of the geographical sub-regions (rural, peri-urban and urban areas), using only those predictors that independently predict the outcome. A p-value of 0.05 was used to test the significance level.

Model

The use of multivariate analysis in the study of health and subjective wellbeing (i.e. self-reported health or happiness) is well established (Grossman, 1972; Smith & Kington, 1997; Di Tella et al., 1998; Blanchflower & Oswald, 2004) equally in Jamaica and Barbados (Bourne, 2008a, 2008b; Bourne & McGrowder, 2009; Hutchinson et al., 2005). The current study will employ multivariate analyses in the study of health and health care-seeking behaviour of Jamaicans. The use of this approach is better than bivariate analyses as many variables can be tested simultaneously for their impact (if any) on a dependent variable.

Scholars like Grossman (1972), Smith & Kingston (1997), Hambleton et al. (2005), Kashdan (2004), Yi & Vaupel (2002), the World Health Organization pilot work a 100-question quality of life survey (WHOQOL) (Orley, 1995) and Diener (1984, 2000) have both used and argued that self-reported health status can be used to evaluate health status instead of objective health status measurement. Other scholars, on the other hand, employed self-reported health conditions to operationalize health of individual (Bourne & McGrowder, 2009). Embedded in the works of those researchers is the similarity of self-reported health status and self-reported dysfunction in assessing health.

The current study will examine whether self-rated health status and self-reported dysfunctions are correlated variables (Equation [1]) as well as to model general self-reported illness (Equation [2]), health care-seeking behaviour of Jamaicans (Equation [3]) and to evaluate the predictors of self-rated health status of Jamaicans (Equation [4]).

$$I_t = f(H_t) \quad [1]$$

where I_t is self-reported dysfunction (illness) is a function of current self-rated health status, H_t

$$I_t = f(A_i, G_i, HH_i, AR_i, H_t, \ln LI_i, \ln C, \ln D_i, ED_i, MR_i, S_i, HI_i, \ln Y, \varepsilon_i) \quad [2]$$

where I_t (i.e. self-reported illness in current time t) is a function of age of respondents, A_i ; sex of individual i , G_i ; household head of individual i , HH_i ; area of residence, AR_i ; current self-reported health status of individual i , H_t ; logged length of illness, LI_i ; logged consumption per person per household member, $\ln C$; logged duration of

time that individual I was unable to carry out normal activities, $\ln D_i$; Education level of individual i, ED_i ; marital status of person i, MR_i ; social class of person i, S_i ; health insurance coverage of person i, HI_i ; logged income, $\ln Y$; and an error term (i.e. residual error).

$$M_t = f(A_i, G_i, HH_i, AR_i, H_t, \ln LI_i, \ln C, \ln D_i, ED_i, MR_i, S_i, HI_i, \varepsilon_i) \quad [3]$$

where M_t is the health care-seeking behaviour in current time t, is a function of age of respondents, and the other variables were previously stated.

$$H_t = f(A_i, G_i, HH_i, AR_i, M_t, \ln LI_i, \ln C, \ln D_i, ED_i, MR_i, S_i, HI_i, I_t, J_t, \varepsilon_i) \quad [4]$$

where H_t is self-rated health status of time period t (i.e. current); I_t is self-reported illness in current time period t; J_t is self-reported injured suffered in the last 4 weeks, and the other variables were previously stated.

Measure

Self-rated health status: “How is your health in general?” And the options were very good; good; fair; poor and very poor. For this study the construct was categorized into 3 groups – (i) good; (ii) fair, and (iii) poor. A binary variable was later created from this variable (1=good and fair 0=otherwise).

Self-reported illness (or self-reported dysfunction): The question was asked: “Is this a diagnosed recurring illness?” The answering options are: Yes, Cold; 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 use in the logistic regression.

Income: Total expenditure was used to operationalize income.

Social class: This variable was measured based on the income quintiles: The upper classes were those in the wealthy quintiles (quintiles 4 and 5); middle class was quintile 3 and poor those in lower quintiles (quintiles 1 and 2).

Health care-seeking behavior: This is a dichotomous variable which came from the question “Has a doctor, nurse, pharmacist, midwife, healer or any other health practitioner been visited?” with the option (yes or no).

Age is a continuous variable in years.

Age group is classified into 7 groups: children (ages less than 15 years); young adults (ages 15 to 30 years); other adults (ages 31 to 59 years); young-old (or young elderly, ages 60 to 74 years); old-old (or old elderly, ages 75 to 84 years); and oldest-old (or oldest elderly, ages 85 years and older).

Results

The sample was 1,006 respondents (40.5% men and 59.5% women), with a mean age of 41.8 years ($SD=27.6$ years). Forty-four percent of the sample reported at least good health, 20% at least poor health and 36% indicated fair self-rated health status. However, 97% of the respondents claimed that they have had some dysfunctions; 6% reported being injured due to accidents, and only 11% indicated that their illness was not diagnosed by a health practitioner. Of those who indicated being diagnosed with a recurring ailment, 5.6% had

arthritis, 20.5% hypertension, 12.4% diabetes mellitus, 9.5% asthma and 14.9% cold. Of those who reported an injury in the last 4 weeks, 19.2% indicated that it was owing to motor vehicle, 46.2% domestic accident and 11.5% mentioned industrial accident (Table 1). Forty-five percent dwelled in urban areas or other towns and 55% in rural areas. Majority of the sample indicated that they have had no formal education (71%) compared to 1.2% tertiary, 15.1% basic or elementary education, 8.7% primary or preparatory schooling and 4.0% secondary level schooling. Substantially, more Jamaicans do not have health insurance coverage (75.3%); 11.5% private health insurance; 7.6% NI Gold and 5.7% other public health insurance coverage. Two thirds of the sample sought health care and a little over one-half of the respondents were heads of households (Table 1).

One half of the sample had annual incomes of US \$5,936.77 (US \$1.00 = Ja. \$80.47) and 50th percentile of health expenditure was US \$9.94. Forty-seven percent of the respondents were never married (includes common-law), 35.8% were married with 3.0% divorced, 1.8% separated and 12.0 widowed. The median length of an illness was 7 days and a median of 2 days were calculated as the length of time in which an individual was ill (Table 1). Some 54.8% of the sample resided in rural areas, 18.6% in other towns and 26.6% in urban areas.

Of the sample, 63.8% responded to the visits to public health care facilities and 64.1% on visits to private health care facilities. Of those who responded to each, 49% attended public health care facilities compared to 57.3% to private health care facilities.

Thirty-eight percent of the sample were classified as poor, 21.0% were in the middle class and 41% as wealthy. Furthermore, 19% were below the poverty line and 21% were in the wealthiest category. Approximately one-half of the rural residents were poor compared to 27% in other towns and 17% in urban areas ($\chi^2(4) = 132.664, p < 0.001, n = 1002$). A cross tabulation between self-rated health status and social standing revealed no statistical correlation between the two variables ($\chi^2(8) = 14.139, p = 0.078, n = 1002$) (Table 2).

An examination of health expenditure, injured in the last 4 weeks, and self-reported dysfunction by area of residence revealed no statistical association (0.088, 0.841, 0.848 respectfully) (Table 3). However there were statistical relationships between self-rated health status ($p < 0.001$), purchase of medication ($p = 0.020$) and health insurance coverage ($p < 0.001$) by area of residence. More women (98.3%) than men (94.8%) reported illness ($\chi^2(1) = 9.885, p = 0.002, n = 1001$).

Based on Table 3, rural respondents reported the highest poor self-rated health status (22.8%) compared to those in other towns (10.2%) and urban dwellers (10.8%). Similarly, rural residents reported a lower coverage of health insurance than those in other towns or urban areas.

An examination of head of household by health care-seeking behaviour revealed no statistical correlation ($\chi^2(1) = 2.010, p = 0.088$) (Table 4). Furthermore, those who sought health care had a greater mean consumption per capita (US \$2,168.09 \pm US \$1,852.36) compared to those who did not seek health care (US \$1,847.39 \pm US \$1,625.14) [$t = -2.834, p = 0.005$].

A cross tabulation between health care-seeking behaviour and sex of respondents revealed no statistical correlation between the two variables ($\chi^2(1) = 3.182, p = 0.074$) (Table 5). Table 5 showed that 68% of women sought health care compared to 62% of men.

On examination, no statistical correlation existed between health care seeking behaviour and self-reported illness of sample ($\chi^2(1) = 2.052, p = 0.105$). When this cross tabulation was controlled for sex, there was no difference between men ($\chi^2(1) = 1.876, p \text{ value} = 0.171, n = 406$) and women ($\chi^2(1) = 0.712, p \text{ value} = 0.399, n = 596$) (Table 6).

Based on Figure 1, there was no statistical difference between self-reported health status of

men and women ($\chi^2 (2) = 5.618, p = 0.060$) (Figure 1). Figure 2 showed that 55.8% of the respondents who indicated that they did not seek health care self-reported good health compared to 37.6% of those who said “yes” they visited a traditional medical care facility or practitioner. Twenty-four percent of those who sought medical care reported poor health compared to 13% who mentioned “no” to seeking health care in the past 4-weeks; whereas more people who sought medical care indicated fair health status than those who reported poor health status ($\chi^2 (2) = 33.298, p < 0.001$).

All the old-old and the oldest-old reported an illness compared to 97% of young-old, 90.7% of young adults and children (98.1%) (Figure 3).

A statistical relation was found between self-reported illness and age cohort of respondents ($\chi^2 (35) = 453.697, p < 0.001, n = 992$). The association was a moderately strong one (contingency coefficient = 0.560). Figure 4 showed that 37% of children had cold, 20% asthma, 21% unspecified compared to 13% of young adults who had cold, 15% asthma and 40% unspecified and this change after 31 years. The three leading causes of morbidity for other aged-adults were unspecified (28%), hypertension (25%) and diabetes mellitus (15%). Hypertension was significantly more for those older than 60 years, with rate being the highest for the oldest-elderly (Figure 4). Based on Figure 4, 31% of young elderly reported hypertension compared to 44% of old-old and 47% of oldest-old whereas for diabetes mellitus, the most number of cases were reported by young-old (26%), then old-old (17%), oldest-old (17%) and other aged-adults (15%).

The cross tabulation between visits to public health care facilities and area of residents revealed a statistical correlation ($\chi^2 (2) = 18.332, p < 0.001, n = 641$) as well as a relationship between private health care facilities and area of residents ($\chi^2 (2) = 22.147, p < 0.001, n = 644$). Based on Figure 5, most of the rural residents attended public health care facilities (56.9%) while most of the other town residents visited private health care facilities.

An examination of visits to health care facilities and social class revealed a statistical correlation: public ($\chi^2 (2) = 35.874, p < 0.001, n = 641$) and private ($\chi^2 (2) = 37.025, p < 0.001, n = 644$). The poor were more likely to attend public health care facilities (63.3%) compared to the middle class (52.5%) and the wealthy (36.6%), indicating that the rich were substantially probable to visit private health agencies (68.8%) compared to the poor (41.7%) and those in the middle class (57.9%) (Figure 6).

Results: Multivariate Analyses

Using logistic regression analyses, self-rated health status was found to be a significant statistical predictor of self-reported dysfunction (Table 7): good self-rated health status with reference to poor self-rated health status (OR=0.271, 95%CI=0.081, 0.915).

The model had statistically significant predictive power (Model $\chi^2 = 12.183, p = 0.002$; Hosmer and Lemeshow goodness of fit $\chi^2 = 0.000, P = 1.00$) and correctly classified 96.9% of the sample (correctly classified 100% of those who indicated self-reported dysfunctions and 0% of those who do not have dysfunctions). The logistic regression model can be expressed as: Log (probability of self-reported dysfunction/probability of not having dysfunction = 4.195 – 1.304 (1=Good Self-rated Health Status, 0=otherwise). Furthermore, the odds of reporting a dysfunction for those who indicated good health status was 82.9% which is less likely than the odds of reporting a dysfunction for those with poor health status (Table 7).

Predictors of Self-reported dysfunction

From the sample, three factors were found to be predictors of self-reported illness: logged

consumption (OR=0.088, 95%CI= 0.008, 0.961); social class of the individual (upper class – OR=76.024, 95%CI=1.846, 3130.54); and age of respondents (OR=1.095, 95%CI=1.024, 1.171) (Table 8).

Table 8 revealed that self-reported dysfunction model had a significant predictive power (Model $\chi^2=27.515$, $p=0.001$; Hosmer and Lemeshow goodness of fit $\chi^2=1.450$, $P = 0.93$), and correctly classified 99.7% of the sample (correctly classified 95.8% of those who indicated self-reported dysfunctions and 0% of those who do not have dysfunctions).

The findings revealed that when the demographic variables were included with self-rated healthy status, the latter was no longer significant (Table 8).

Predictors of Health Care-Seeking Behaviour

Based on Table 9, from the logistic regression, 5 variables are statistically significant predictors: Age of respondents (OR=1.031, 95%CI=1.014, 1.049); Area of residence (Other towns with reference to rural area – OR=0.5, 95%CI=0.278, 0.902); logged consumption (OR=3.605, 95%CI=1.814, 7.167); marital status (married – OR=0.468, 95%CI=0.260, 0.843; divorced, separated or widowed – OR=0.383, 0.163, 0.903) and social class (Upper class – OR=0.319, 95%CI=0.106, 0.958).

Health Care-Seeking Behaviour Model had statistically significant predictive power (Model $\chi^2=49.628$, $p=0.001$; Hosmer and Lemeshow goodness of fit $\chi^2=13.900$, $P = 0.84$), and correctly classified 77.8% of the sample (correctly classified 97.8% of those who sought health care and 13.3% of those who did not seek health care (Table 9). The logistic regression model can be expressed as: $\text{Log (probability of seeking health care/probability of not seeking health care)} = -14.059 + 0.031 (\text{Age in years}) - 0.692 (1=\text{Other Town, } 0=\text{Rural area}) + 1.282(\text{logged consumption}) - [0.759(1=\text{if married, } 0=\text{single}) + 0.959(1=\text{if divorced, } 0=\text{single})] - 1.144(1=\text{if upper class, } 0=\text{otherwise})$ (Table 9).

Predictors of Self-rated Health Status

Health status of those who seek health care can be predicted by 3 factors. These are logged duration of the individuals to carry out their normal activities (OR=0.594, 95%CI=0.413, 0.855); age of respondents (OR=0.967, 95%CI=0.949, 0.986) and area of residence (urban area – OR=2.415, 1.195, 4.881; other towns – OR=2.514, 1.162, 5.442).

The Health Status Model was a statistically predictive one (Model $\chi^2=59.824$, $p=0.001$; Hosmer and Lemeshow goodness of fit $\chi^2=4.324$, $P = 0.827$), and correctly classified 77.2% the sample (correctly classified 34.5% of those who reported good health status and 93.0% of those who do not (Table 10). The logistic regression model can be expressed as: $\text{Log (probability of self-reported good health status/probability of not reporting good health)} = 1.219 - 0.520 (\text{logged duration unable to work}) + [0.882(1=\text{Urban area, } 0=\text{otherwise}) + 0.922(1=\text{other town, } 0=\text{otherwise})] - 0.033(\text{Age})$ (Table 10).

Discussion

Two thirds of the sample mentioned that they sought medical care in the last 4-week, while marginally more individuals who indicated having sought health care, reported fair health status than those who claimed good health status. Interestingly, 9 out of 10 respondents reported an illness with 89 out of every 100 opined that their illness was diagnosed by a health care practitioner. Rural residents were 2.4 times more likely to report poor health status than other town dwellers; whereas urban residents were one-half less likely to evaluate their health as poor. A critical finding of this study is that 51 out of every 100 rural residents

were poor, while the ratio was 27 out of 100 in other towns and 17 out of 100 in urban areas. In spite of the high report of illness and that 5 out of 19 respondents had diagnosed chronic recurring illness (i.e. diabetes mellitus, arthritis, asthma, and hypertension); only 6 out of 10 respondents purchased the prescribed medication. The study revealed that good health status was negatively correlated with self-reported dysfunctions. However, when the socio-demographic variables were introduced within the model, health status dissipated as a factor of self-reported dysfunctions. Of the socio-demographic variables chosen to be tested in the self-reported dysfunction model, consumption, social class and age of respondents were found to be determinants. Whereas, this is so for the abovementioned variables the determinants of health care-seeking behaviour of Jamaicans were age, area of residents, consumption, marital status, and social class; with duration of time unable to work, area of residents and age of respondents.

Many theories (or models) have been developed to explain health care-seeking behaviour of people and these are widely used by Caribbean public health policy makers in planning health demands and needs of societies. The disadvantages in using those theories (Health Belief Model; Theory of Reasoned Actions; Theory of Planned Behaviour; Transtheoretical Model and Stages of Change; Precaution Adoption Process Model) are that they were not developed from data collected from the populace. These theories are atypical to Caribbean or in particular Jamaica. They are germane the context that the culture is different along with other indigenous characteristics. The use of health care-seeking models which are not biased to the culture means that we mis-prescribed solutions which are for the targeted population. According to Glanz et al. (2002), while it is reasonable to assume that a theory such as Health Belief Model is applicable to different cultures, it also is important to realize that constructs may have to be adapted to make them more relevant to the target culture. Those modifications may be applicable with some generalizability to developing nations, but this does not suggest its comprehensive understanding of Caribbean peoples or Jamaicans.

Although the Health Belief Model did not emerge from data in Jamaica or the wider Caribbean, it has some merits which we examine in this study. This conceptual model is a framework for health behaviour. The Health Belief Model (HBM) was developed in the 1950s by some social psychologists in the United States Public Health Service. It was designed to account for the failure of people to become involve in preventative and detection disease programmes (Hochbaum, 1958; Rosenstock, 1960); and then it evolved to peoples' response to symptoms (Kirscht, 1974) with a later expansion that entails individuals' behaviour in response diagnosed dysfunctions (Becker, 1974). Hence, embedded in the HBM are preventative actions, illness behaviour, and sick-role behaviour, suggesting that dysfunction is the primary focus of this model. This work does not concur with the HBM as it was found that health status was not correlated with health care-seeking behaviour of Jamaicans. However, marital status, area of residence and social class (i.e. upper class with reference to poor) were found to be negative determinants of health care-seeking behaviour while age and consumption were positive determinants.

The current study revealed that consumption was the most significant predictor of health care-seeking behaviour of Jamaicans followed by age of respondents. It was found that those who are able to spend more on consumer expenditure are 4 times more likely to seek medical care, which concurred with Brow et al (2008). Biological ageing means a greater likelihood for people to seek health care and this concurs with other studies (Bourne, McGrowder & Nevins, in print; Bourne 2009; Brown et al 2008; Erber 2005; Brannon & Fiest 2004; Costa 2002; Buzina 1999; CAJANUS 1999; Anthony 1999) as the reasons are linked to increased

biological conditions. According to Morrison (2000), there is a shift from infectious communicable diseases to chronic non-communicable diseases as a rationale for the longevity of the Anglophone Caribbean populace. This research concurs with Morrison. The findings on in this study revealed that as people age, the typology of diseases change from cold, diarrhoea and asthma to diabetes mellitus, hypertension and arthritis. The probability of the first three illnesses resulting in mortality is lower than the latter three morbidities.

In Jamaica, statistics showed that among the 10 leading cause of mortality for males 5 years and older were external causes, cerebrovascular diseases, diabetes mellitus, ischaemic heart diseases, malignant neoplasm and hypertension, while for females 5 years and older the diseases were diabetes mellitus, cerebrovascular diseases, hypertension, ischaemic heart disease, external cause and heart diseases (Statistical Institute of Jamaica, 2008). On the other hand, the leading mortality among males and females under 5 years were disorders relating to gestation and fetal growth, respiratory distress, other respiratory conditions, other congenital malformations, and perinatal conditions. Hence, the study concurs with the statistics and Morrison's claim that the typology of diseases shift with the ageing of an individual. In addition another study found that the sixth leading causing of mortality for elderly in Barbados, Trinidad and Tobago, St. Lucia, Montserrat, Guyana, Dominica, Barbados and Bahamas were fundamentally the same. They were respiratory infections, cerebrovascular diseases, hypertension, diabetes, malignant neoplasm, and diabetes mellitus, which reinforced the primary finding that 39 out of every 100 Jamaican reported being diagnosed with diabetes mellitus, hypertension and arthritis and the unspecified group was 23 out of 100 respondents. Among the diseases in the unspecified category would be malignant neoplasm. In 2007, statistics indicated that 8.5% of the Jamaica's population was less than 5 years; 9.7% was 5 to 9 years; 10.3% was 10 to 14 years, meaning that 28.6% of the population was children. With approximately 71% of Jamaica's population ages 15 years and older, this explains the high probability of chronic diseases accounting for more deaths than communicable and illnesses affecting children.

The current findings indicate that health status is not determined by health care-seeking behaviour, self-reported illness or length of illness. This speaks volume about the culture of unwillingness to visit traditional medical practitioners, and adds more information to the discussion, of illness and mortality. Jamaicans are unlikely to visit health care practitioners owing to their perspective of illness, severity of illness and the likely of the dysfunction to cause mortality. When illness is equated to mortality, the probability of seeking medical care will be high. A part of the reason for this health care-seeking behaviour is embedded in the culture as illness is viewed as weakness. Another explanation for this low probability is Jamaicans involvement of non-traditional medical care behaviours. To address ill-health, Jamaicans visit spiritual advisers (i.e. unknown as obeah men). These individuals perform the similar functions like the traditional health practitioners except surgeries. The data used for this study excluded non-traditional medical healers, and so underestimate the coverage of medical care-seeking behaviour of sample.

There is a finding which appears paradoxical as people who resided in urban areas do not exhibit greater or lower health care-seeking behaviour than those who dwelled in rural areas. Rural residents were more likely to seek medical care than other town dwellers while more consumption was positively correlated with seeking more health care. Interestingly, the wealthy spent more on consumption than the poor, yet the poor sought more medical care-seeking behaviour than upper class Jamaicans. Although rural residents were more likely to be poorer than other Jamaicans and that they were more likely to spend less than urban and

other town dwellers. Embedded in this finding, is the fact that it is not higher social class that determines health seeking behaviour but money. Those in the upper class may have access to more financial resources, but rural residents have greater social network which avails them of extended economic resources. Rural residents have more children, and the culture within those areas is such that the wider community is willing to aid each other for consumption including medical care. Another issue that is not on the surface of the finding is the fact that they (i.e. rural residents) were attending more to medical care than other town dwellers and there is no evidence of statistical difference in health-seeking behaviour between rural versus urban residents, owing to disproportionately more of them in the country than other dwellers. The wide primary health care coverage which is inexpensive means that Jamaicans even if they are poor can access health care. Where the difference will be is in access to private health care service, and this is basic fundamentally on one's ability to afford it and not on wanting to access the service.

The inverse correlation between self-reported dysfunction and consumption, showed a positive association between health care-seeking behaviour and consumption within the context that those in the upper class have a greater degree of reporting illness, means that there is a cultural bias that explains Jamaicans unwillingness to seek health care. This study did not initially examine lifestyle behaviour of Jamaicans, but given that consumption expenditures are constituted of meal and non-consumption expenditures, consumption being a negative predictor of self-reported illness, suggests that Jamaicans were involved in relatively good decisions that are lowering illness. The positive relations between health care-seeking behaviour and consumption are indicators of preventative lifestyle practices. This is so, because in 2006, 70% of Jamaicans who reported ill-health sought medical care (Planning Institute of Jamaica and Statistical Institute of Jamaica, 2008) compared to 66% in this study (in 2007), within the context that inflation increased by 194.7% over 2006 (in 2007), this means that increased consumption expenditure does not necessarily mean more meal consumed or non-consumption as this change is owing to price increases. With more Jamaicans attended private health care facilities, inflation would increase costing of the offered services.

The current study found that rural residents had the least self-evaluated health status, and thereby justify more of them seeking medical care than upper class Jamaicans. Another explanation for more rural residents attended health care institution is owing to greater percentage of them in older ages than in other geographic zones. Age is a negative determinant of health status and positively correlated with self-reported dysfunction, and accounts for more rural residents demanding more health care than other people in Jamaica.

This study refined the finding of Grover et al's work (2006). They found that significantly more urban area dwellers take self medication compared to rural area residents (see also, Sudha et al, 2003). In this study, it was revealed that that more urban dwellers purchased over the counter medication than rural residents; but that it was other town dwellers (i.e. semi-urban) that significantly used self medication than rural area people. This means that self treatment was more an urban and/or semi-urban phenomenon than a rural area reality. On the other hand, rural area residents significantly purchased more prescribed medication than other town dwellers, while urban area settlers bought more prescribed medicine compared to rural and semi-urban residents. This study went further than Grover et al. (2006) and Sudha (2003), when it examined those who did not buy by area of residence. The current work revealed that significantly more rural area residents did not purchase medication than residents in other geographic areas.

Interestingly health care-seeking did not differ significantly between the sexes, which concur with a study by Williams et al (2006). One of the explanations for this non-significance can be accounted for based on the non-significant disparity in health status and self-reported dysfunctions of males and females.

Conclusion

Jamaica is comprised of peoples of different ethnic; socialization; social class; geographic zones and culturalization, and this accounts for a difference in belief system and health behaviour. This disparity must be taken into consideration when designing public health programmes. Hence, the wholesale utilization of any health model that is developed outside of the society or even medication of such a theory is not necessarily applicable to the nation. The current study revealed that health behaviour is a function of socio-demographic variables. Poverty which is synonymous to rural areas influences people choice in visits to health care-seeking facilities. An interesting consideration of rural residence with those than residents of other geographic zones is the culture and its influence on health care-seeking behaviour and other such decisions. Home remedy and non-traditional healers (i.e. obeah men) is a substitute product that is used more by rural dwellers than others, because of the retention of the African tradition. While urban and other town residents were exposed to this culture and socialization, their higher level of education, access to more information and financial resources account for re-socialization and new re-adaptation to traditional medical care utilization. Therefore, when health literacy and public health programmes are fashioned in Jamaica or other developing societies, health care-seeking behaviour model must not only be modified but must utilize data from those nations to address the health needs of the geopolitical zones and not some model developed for developed societies with some modifications. The findings of this study suggests that health service professionals need to increase awareness about the benefits of purchasing prescribed medication, and that this must be more so for rural and urban residents.

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Table 1: Demographic Characteristic of Sample

Variable	Number (n)	Percentage
Sex:		
Men	407	40.5
Women	599	59.5
Self-rated Health Status		
Very good	122	12.2
Good	317	31.6
Fair	361	36.0
Poor	173	17.3
Very poor	29	2.9
Health Care-Seeking Behaviour		
No	348	34.6
Yes	658	65.4
Household Head		
No	559	55.6
Yes	447	44.4
Marital Status		
Married	265	35.8
Never married (includes common-law)	351	47.4
Divorced	22	3.0
Separated	13	1.8
Widowed	89	12.0
Injured in last 4-week		
No	942	93.7
Yes	63	6.3
Diagnosed Recurring Illness		
Cold	148	14.9
Diarrhoea	27	2.7
Asthma	94	9.5
Diabetes mellitus	123	12.4
Hypertension	204	20.5
Arthritis	56	5.6
Other	232	23.4
No	109	11.0
Health Insurance		
Private	115	11.5
NI Gold	76	7.6
Other Public	57	5.7
No	756	75.3
Self-reported dysfunction		
None	31	3.1
Have	971	96.9
Annual Income Median	US \$5, 936.77	

Table 2: Self-rated Health Status by Social Standing

Health Status:	Social Standing					Total
	Poorest	Poor	Middle class	Upper Middle class	Upper Class	
Good	70 (37.0)	78 (41.9)	94 (44.8)	103 (50.0)	94 (44.5)	439 (43.8)
Fair	66 (34.9)	71 (38.2)	73 (34.8)	68 (33.0)	83 (39.3)	361 (36.0)
Poor	53 (28)	37 (19.9)	43 (20.5)	35 (17.0)	34 (16.1)	202 (20.2)
Total	189	186	210	206	211	1002

$\chi^2(8)=14.139, p=0.078, n=1002$

Table 3: Health care, injured, self-rated health status, buy medication, and health insurance coverage by area of residence

Variable	Area of residence			pvalue
	Urban	Other towns	Rural	
Injured in last 4-week				0.841
No	252 (94.4)	174 (93.0)	516 (93.6)	
Yes	15 (5.6)	13 (7.0)	35 (6.4)	
Self-rated Health status				< 0.001
Very good	26 (9.7)	34 (18.3)	62 (11.3)	
Good	104 (38.8)	60 (32.3)	153 (27.9)	
Fair	104 (38.8)	70 (37.6)	187 (34.2)	
Poor	29 (10.8)	19 (10.2)	125 (22.8)	
Very poor	5 (1.9)	3 (1.6)	21 (3.8)	
Buy Medicine in last 4-weeks				0.020
Buy, Prescribed	173 (66.0)	109 (60.6)	331 (62.9)	
Buy, partial prescribed	6 (2.4)	2 (1.1)	10 (1.9)	
Buy, prescribed over counter	9 (3.4)	12 (6.7)	8 (1.5)	
Buy, over counter medicine	14 (5.3)	11 (6.2)	27 (5.1)	
Did not buy, prescribed	9 (3.4)	1 (0.6)	22 (4.2)	
None prescribed required	51 (19.5)	45 (25.0)	128 (24.4)	
Health Insurance Coverage				< 0.001
Yes, Private	50 (18.7)	29 (15.5)	36 (6.6)	
Yes, Government	21 (7.9)	16 (8.6)	39 (7.1)	
Yes, Other Public	14 (5.2)	11 (5.9)	32 (5.8)	
No	182 (68.2)	131 (70.2)	443 (80.5)	
Self-reported dysfunction				0.848
None	8 (3.0)	7 (3.7)	16 (2.9)	
Yes	257 (97.0)	180 (96.3)	534 (97.1)	
Annual Income Mean (SD)	US \$10,249.43 (US \$8,613.98)	US \$8,241.77 (US \$6,570.46)	US \$6,361.03 (US \$4,849.60)	< 0.001
Social class				< 0.001
Poor	44 (16.4)	51 (27.3)	282 (51.2)	
Middle	49 (18.4)	42 (22.4)	120 (21.8)	
Upper	174 (65.2)	94 (50.3)	149 (27.0)	
Public facilities				< 0.001
No	109 (59.2)	71 (61.2)	147 (43.1)	
Yes	75 (40.8)	45 (38.8)	194 (56.9)	
Private facilities				< 0.001
No	63 (33.9)	37 (31.6)	175 (51.3)	
Yes	123 (66.1)	80 (68.4)	166 (48.7)	

Table 4: Head of Household by Health Care-Seeking Behaviour

	Health Care-Seeking Behaviour		pvalue
	No	Seek Care	
Head of Household:			0.088
No	204 (58.6)	355 (54.0)	
Yes	144 (41.4)	303 (46.0)	
Total	348	658	

$\chi^2(1)=2.010, p=0.088, n=1006$

Table 5: Health Care-Seeking Behaviour by Sex of Respondents

	Sex		pvalue
	Man	Woman	
Health Care-Seeking Behaviour:			0.074
Did not seek care	154 (37.8)	194 (32.4)	
Seek health care	253 (62.2)	405 (67.6)	
Total	407	599	

$\chi^2 (1) = 3.182, p = 0.074, n = 1006$

Table 6: Health Care-Seeking Behaviour by Illness, Controlled for Sex

		Self-reported Illness		Self-reported Illness	
		Yes	No	Yes	No
		Male ¹		Female ²	
Health Care-seeking behaviour	No	149 (38.9)	5 (23.8)	191 (32.6)	2 (20.0)
	Yes	236 (61.3)	16 (76.2)	395 (67.4)	8 (80.0)
Total		385	21	586	10

¹ χ^2 (1) = 1.876, ρ value = 0.171, n= 406

² χ^2 (1) = 0.712, ρ value = 0.399, n= 596

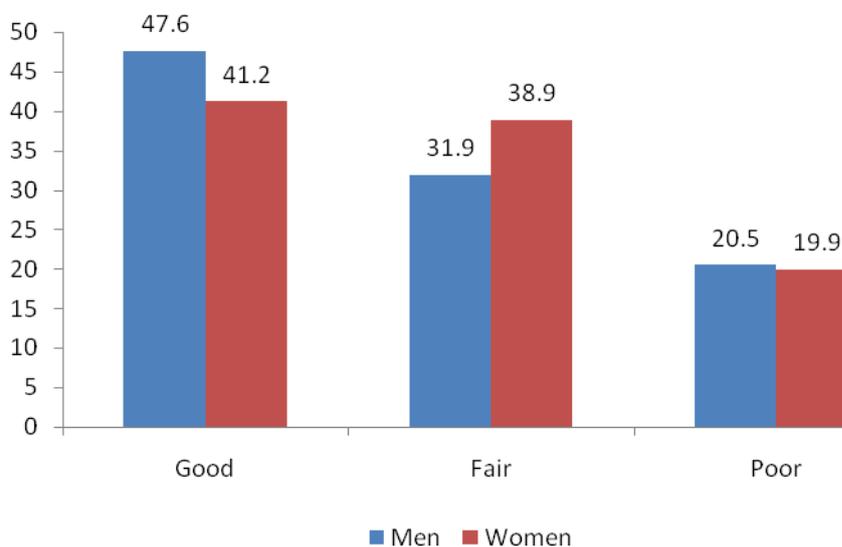


Figure 1: Self-rated Health Status by Sex of respondents (n=1,002)

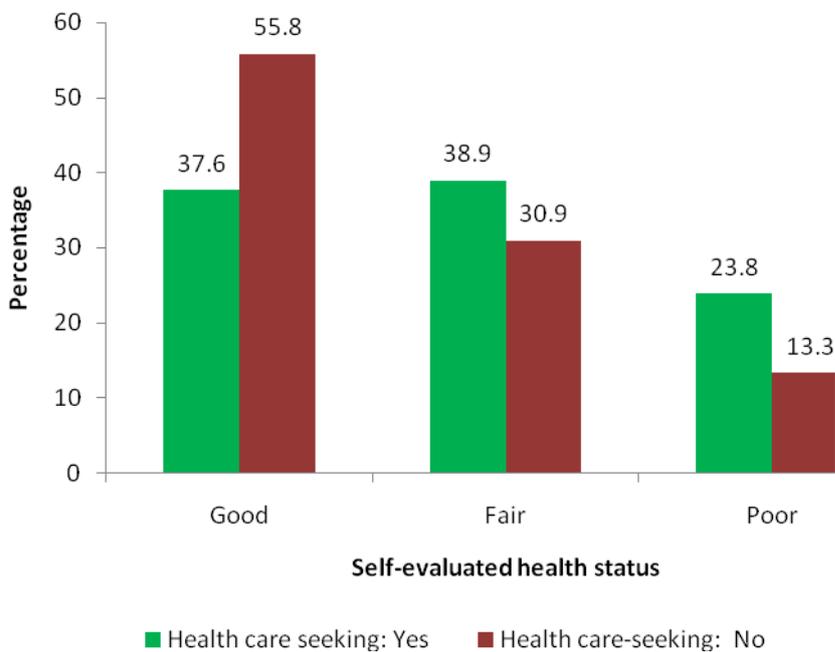


Figure 2: Self-evaluated health status and health care-seeking behaviour

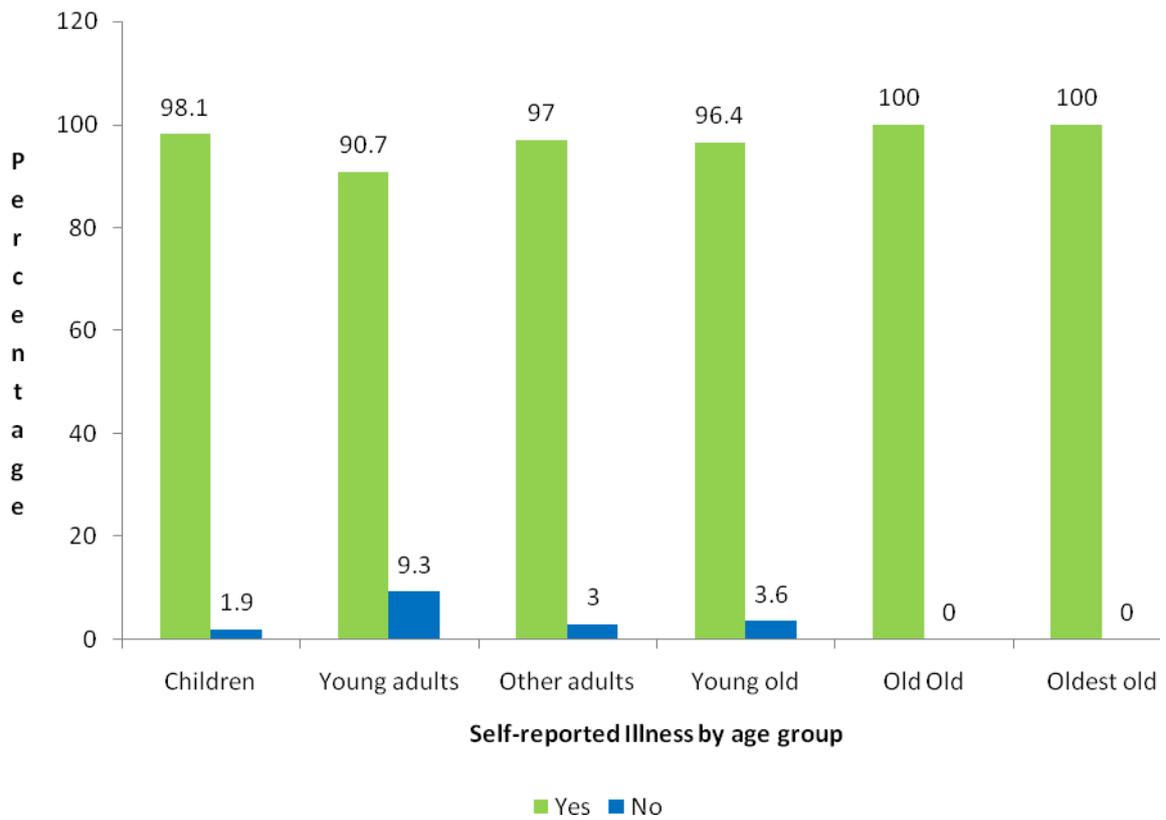


Figure 3: Self-reported illness by age group of respondents

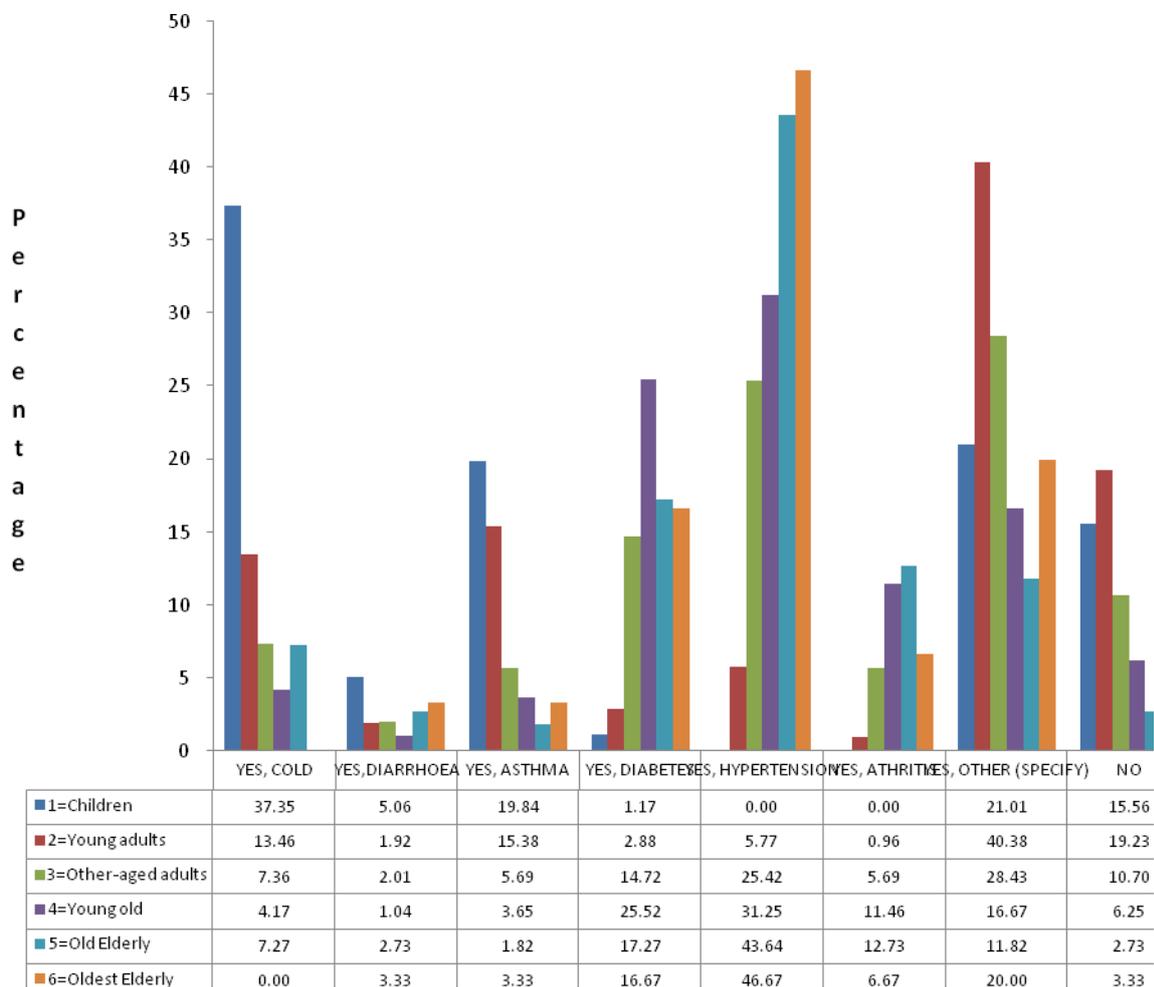


Figure 4: Self-reported diagnosed recurring Illness by Age cohort of respondents

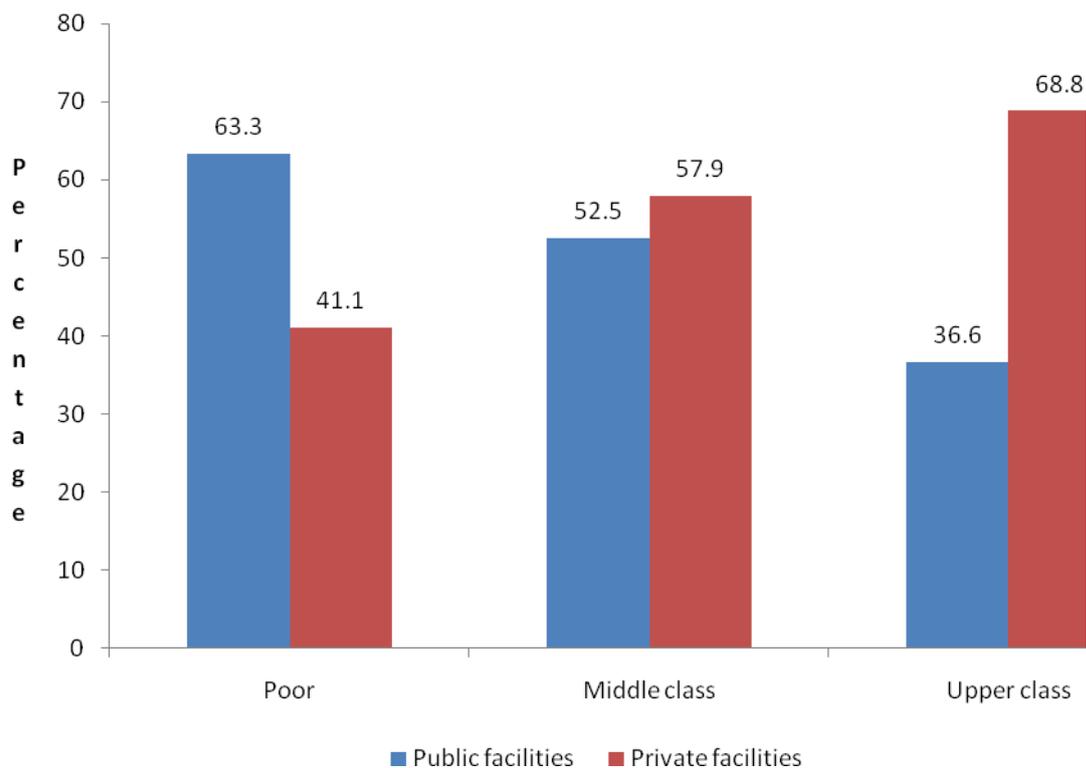


Figure 5: Percentage of persons who visited public or private health care facilities

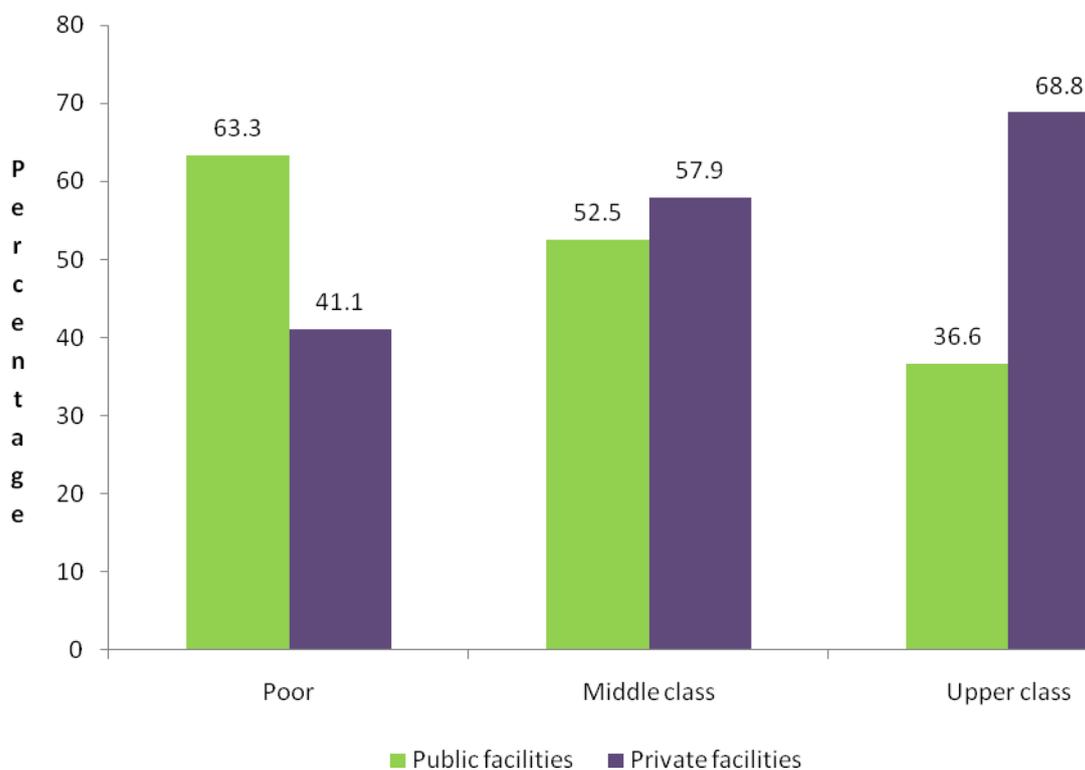


Figure 6: Percentage of visits to public or private health facilities by social class

Table 7: Logistic Regression: Self-rated Health Status as predictor of Self-reported Dysfunctions

Dependent variable: Self-reported Dysfunction	Coefficient	Std Error	Odds ratio	95.0% C.I.
				Lower, Upper
Good Health Status	-1.304	0.620	0.271	0.081, 0.915*
Fair Health Status †Poor health status	0.065	0.736	1.067	0.252, 4.513
Constant	4.195	0.582	66.333	-

$\chi^2 (2) = 12.183$, $p = 0.002$; $n = 998$

-2 Log likelihood = 264.094

Hosmer and Lemeshow goodness of fit $\chi^2 = 0.000$, $P = 1.00$.

Nagelkerke $R^2 = 0.050$

Overall correct classification = 96.9%

Correct classification of cases of self-reported dysfunctions = 100.0%

Correct classification of cases of no dysfunctions = 0.0%

†Reference group

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: Logistic Regression: Predictors of Self-reported Dysfunctions

Variable	Coefficient	Std. Error	Odds Ratio	95.0% C.I.
				Lower, Upper
Urban area	-0.090	0.861	0.914	0.169, 4.939
Other town	-0.438	0.923	0.645	0.106, 3.941
†Rural area				
Health insurance	0.966	0.933	2.626	0.422, 16.343
Log consumption	-2.430	1.219	0.088	0.008, 0.961*
Log health expenditure	-0.495	0.291	0.610	0.345, 1.079
Log length of illness	-0.031	0.336	0.970	0.501, 1.875
Log duration unable to work	-0.369	0.367	0.691	0.337, 1.419
Secondary or Tertiary	20.338	8847.72 3	68054095 4	0.000, 0.000
†No formal education				
Married	-0.174	1.025	0.840	0.113, 6.267
Divorced, separated, widowed	-1.545	1.326	0.213	0.016, 2.871
†Never Married				
Middle class	2.080	1.108	8.005	0.912, 70.228
Upper class	4.331	1.897	76.024	1.846, 3130.54*
†Poor				
Head household	-1.404	0.913	0.246	0.041, 1.471
Sex (1=Man)	-0.959	0.725	0.383	0.093, 1.586
Age	0.091	0.034	1.095	1.024, 1.171**
Good health status	0.046	0.989	1.047	0.151, 7.274
Fair health status	0.670	0.923	1.955	0.320, 11.927
Logged income	0.420	0.638	1.521	0.435, 5.317
Constant	26.315	14.148	-	-

$\chi^2 = 27.515$, $p < 0.001$

-2 Log likelihood = 74.212

Hosmer and Lemeshow goodness of fit $\chi^2 = 1.450$, $P = 0.993$

Nagelkerke $R^2 = 0.303$

Overall correct classification = 99.7%

Correct classification of cases of self-reported dysfunction = 95.8%

Correct classification of cases of without self-reported dysfunction = 0.0%

†Reference group

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9: Logistic regression: Variables Explaining Health Care-Seeking Behaviour

Variable	Coefficient	Std. Error	Odds ratio	95.0% C.I.
				Lower, Upper
Age	0.031	0.009	1.031	1.014, 1.049***
Sex (1=Man)	-0.357	0.273	0.700	0.410, 1.195
Head Household	-0.407	0.284	0.665	0.381, 1.161
Urban Area	0.061	0.329	1.063	0.558, 2.025
Other Town	-0.692	0.300	0.500	0.278, 0.902*
†Rural				
Good Health Status	-0.563	0.355	0.569	0.284, 1.142
Dummy Health Insurance	0.434	0.303	1.543	0.852, 2.794
Fair Health Status	-0.054	0.319	0.948	0.507, 1.771
Log Length of illness	-0.077	0.110	0.926	0.746, 1.149
Log Consumption	1.282	0.351	3.605	1.814, 7.167***
Log Duration unable to work	0.102	0.131	1.108	0.856, 1.432
Secondary or Tertiary	0.467	0.660	1.596	0.437, 5.821
†No formal education				
Married	-0.759	0.300	0.468	0.260, 0.843*
Divorced, separated or widowed	-0.959	0.437	0.383	0.163, 0.903*
†Never married				
Middle class	-0.483	0.425	0.617	0.268, 1.419
Upper class	-1.144	0.562	0.319	0.106, 0.958*
†Poor				
Constant	-14.059	3.952	0.000	-

χ^2 (16) = 49.628, $p < 0.001$
 -2 Log likelihood = 439.317
 Hosmer and Lemeshow goodness of fit χ^2 = 13.900, $P = 0.84$
 Nagelkerke R^2 = 0.050
 Overall correct classification = 77.8%
 Correct classification of cases of seeking health care = 97.4%
 Correct classification of cases of not seeking health care = 13.3%
 †Reference group
 * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10: Logistic Regression: Variables of Good Self-rated Health Status

Variable	Coefficient	Std. Error	Odds ratio	95.0% C.I
				Lower, Upper
Log Consumption	0.105	0.463	1.111	0.448, 2.753
Log Health Expenditure	0.105	0.170	1.110	0.796, 1.550
Log Length of illness	-0.078	0.148	0.925	0.692, 1.236
Log Duration unable to work	-0.520	0.185	0.594	0.413, 0.855**
Secondary or Tertiary †No formal education	0.633	0.675	1.884	0.502, 7.073
Married	-0.037	0.347	0.963	0.488, 1.900
Divorced, separated or widowed †Never married	0.112	0.500	1.118	0.420, 2.978
Middle Class	-0.358	0.485	0.699	0.270, 1.808
Upper class †Poor	-0.765	0.678	0.465	0.123, 1.760
Self-reported illness	-1.804	1.108	0.165	0.019, 1.446
Self-report injury	-1.073	0.887	0.342	0.060, 1.943
Health Insurance	0.454	0.324	1.575	0.834, 2.973
Urban Area	0.882	0.359	2.415	1.195, 4.881*
Other Town †Rural area	0.922	0.394	2.514	1.162, 5.442*
Age	-0.033	0.010	0.967	0.949, 0.986**
Sex (1=Man)	0.181	0.336	1.199	0.620, 2.317
Head Household	0.130	0.332	1.139	0.594, 2.184
Constant	1.219	5.534	3.385	-

$\chi^2 = 59.568, p < 0.001$

-2 Log likelihood = 303.022

Hosmer and Lemeshow goodness of fit $\chi^2 = 4.324, p = 0.827$

Nagelkerke $R^2 = 0.254$

Overall correct classification = 77.2%

Correct classification of cases of good self-rated health = 34.5%

Correct classification of cases of not seeking health care = 93.0%

†Reference group

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$