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Predictors of Good Health Status of Rural Men in Jamaica

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Abstract

Aim: A comprehensive review of literature revealed that there was a gap in health research literature in Jamaica on determinants of good health of rural men. This study seeks to fill this void by examining cross-sectional survey data to model predictors of self-reported good health status of rural men in Jamaica.

Method: A sample of 5,041 respondents was extracted from a national cross-sectional survey of 25,018 respondents. Stratified random probability sampling technique was used to draw the sample. Data were stored, retrieved and analyzed using SPSS for Windows 16.0. Descriptive statistics were used to provide pertinent socio-demographic characteristics of the sample and logistic regression was used to establish a predictive model of good self-reported health status of rural Jamaicans.

Results: Seventeen percent of rural men claimed that they had poor health, 4.9% had health insurance, 61.6% visited a health care practitioner, 96.0% purchased prescribed medications and 45.3% completed taking the prescribed medications. The predictors of good health status of rural men in Jamaica are cost of medical care (OR=0.916, 95% CI=0.841-0.997), retirement income (OR=0.0.382, 95% CI=0.206-0.707), marital status – separated, divorced or widowed with reference to those never married (OR=0.270, 95% CI=0.178-0.410), and married with reference to never married men (OR=0.465, 95% CI=0.356-0.609)- health insurance coverage (OR=0.041, 95% CI=0.027-0.063), number of children in household (OR=1.200, 95% CI=1.069-1.347), and the number of durable goods owned by the man (OR=1.107, 95% CI=1.050-1.166).

Conclusion: Children continue to be not only futuristic assets to parents, but that they currently improve the health status of rural men.

Keywords: Health status, Good Health, Rural Men, Social determinants of Health, public health, Jamaica

Introduction

Culturally and traditionally in Jamaica, health is viewed on the other side of the sickness pendulum. This is not typical to Jamaica alone as it is the case in many Western Societies where also health is defined as the 'absence of diseases' [1-3]. This approach is both narrow and negative in scope. According to some scholars, the aforementioned conceptualization of health emphasizes the absence of some disease causing pathogens, and not really health[1-2]. Such a perspective is in keeping with traditional biomedical model that views the exposure to specific pathogen as the cause of diseases in organisms. This began during 130ce to 200ce in Ancient Rome [2, 4], and despite the efforts of the WHO as early as in 1946 [3] and Engel [5-9] to expand this image of health, it is still widespread in contemporary Jamaica.

Owing to the image of health which is sickness, health care utilization for men can be interpreted as weakness and not preventative care. This cultural bias is such that 'sicky sicky' is used to explain men who frequently visit health care facilities or claim that they are suffering from dysfunctions. Men who must protect their "machoism" (or masculinity) will then infrequently visit health care utilization as they must display strength and so sickness which is the opposite of this viewpoint must be distant from their social survivability. Continuing, task specialization for Caribbean males means that some functions are labeled based on gender specification. This explains why Caribbean men[11] in particular Jamaican males will not publicly execute some functions[11-13]; because the gender defines particular roles and general function in the society. Masculinity for the Caribbean man is synonymous with power, strength, 'toughness', and in the process he must not show any appearance of 'softness', fragility, as these are associated with feministic behaviour. It is within the aforementioned context that Jamaican males are not lovers of reading, literature, English language, home management, child-care, nursing, cosmetology and cannot display being "sicky sicky" (ie. sickly). Sickness is synonymous with health and explains the rationale for the health-gender differential in seeking medical care in Jamaica.

Over the last 2 decades (1988-2007), statistics from the Planning Institute of Jamaica and the Statistical Institute of Jamaica (in Jamaica Survey of Living Conditions - JSLC)[14] showed that the greatest percentage of Jamaican men report illness or ailment (16.3% in 1990) and of that amount 37.9% of them sought medical care. Women, on the other hand, reported more dysfunctions compared to men and sought more health care than men except in 1991, 1995 and 1997. The last available data on Jamaica in regard to health is for 2007; this showed that 13.1% of men reported illness and 62.8% of them sought health care for their health conditions. The irony is that 17.8% of women reported ailments and 68.1% of them visited health care facilities for medical care and spent less time suffering from those illnesses (9.3 days) compared to men (10.6 days). This health gender-differential accounts for the disparity in life expectancy between the sexes as statistics for Jamaica showed that women outlive men by 6 years [4]. Globally, this difference in life expectancy is 8 years more for women than men,[15,16] emphasizing the role that culture plays in denying men of better health compared to their female counterparts.

In both developing and developed countries, urbanization is substantially as a result of

development of those zones compared to rural geopolitical areas. Although we cannot establish in Jamaica that urbanization results in more illness experienced by rural residents, the JSLC revealed that over the last two decades (1988-2007) there are more self-reported illness/injury by rural Jamaicans than urban dwellers. In 2007, 17.3% of rural Jamaicans reported illness compared to 13.9% of those who dwelled in Other Towns and 14.1% of those in urban areas. Of those who reported illnesses, 59.9% of them indicated a chronic recurring ailment. The typology of chronic ailments suffered by rural residents was asthma (8.2%), diabetes (10.8%), hypertension (22.6%) and arthritis (9.3%); and more of them had arthritis and less diabetes than those who resided in other geopolitical zones.

Statistics from the Statistical Institute of Jamaica[17] indicated that the five leading causes for mortality of men in Jamaica were cerebrovascular diseases, diabetes mellitus, ischaemic heart disease, malignant neoplasm of prostate and hypertensive diseases. A group of scholars cited that the rate of cancer for Jamaican men was even greater than that of men in the United States[19]. If the culture is such that men are less likely to visit health care facilities and that more of them live in rural zones, within the context of the aforementioned morality and particular dysfunctions in rural areas, what determine good health for rural men? A comprehensive review of health literature in the Caribbean in particular Jamaica revealed dearth of studies exists on this phenomenon. Studies that have examined health in the region have not yet ventured into this aspect of health. It is well documented that since 1880 in Jamaica,[4,17] women have been outliving men and that less men have been reporting illness; then, there is undoubtedly a need to understand those factors that determine good health status of rural men in order to effectively plan health programmes that are geared towards improving health in those with poor health.

This study examines predictors of good health status of rural men, as it offers an opportunity to understand men and how their health can be planned. Given that more people live in rural zones in Jamaica, it follows that understanding health status of rural men is to comprehend much about this group of people than mortality to habits, beliefs and practices. As the health of men is not the same as that of women, we cannot apply the solutions for the different sexes, or even geopolitical zones as they are different from each other. Given that men used less of the health care facilities than women, to comprehend those with good health as insight into the life of those with poor health.

Method and Data

Participants and questionnaire

The current research extracted a sample of 5,041 respondents (20.2% of the survey) based on those who indicated residing in rural parishes in Jamaica and being men. The sample of all rural men was taken from a nationally cross-sectional survey's data set of 25,018 respondents. The survey used stratified random probability sampling technique to drawn the 25,018 respondents. The non-response rate for the survey was 29.7% with 20.5% who did not response to particular questions, 9.0% did not participated in the survey and another 0.2% was rejected due to data cleaning. The study used secondary cross-sectional data from the Jamaica Survey of Living Conditions [19]. The JSLC was commissioned by the Planning Institute of Jamaica (PIOJ) and the Statistical Institute of Jamaica (STATIN). These two organizations are responsible for planning, data collection and formulating policy guidelines for Jamaica.

The JSLC is a self-administered questionnaire where respondents are asked to recall detailed information on particular

activities. The questionnaire covers demographic variables, health, immunization of children (0 to 59 months), education, daily expenses, non-food consumption expenditure, housing conditions, inventory of durable goods, and social assistance. Interviewers are trained to collect the data, which is in preparation of the household members. The survey is conducted between April and July annually.

Model

The multivariate model used in this study is a modification of those of Grossman [20], Smith & Kington [21], and Bourne [4, 22] which captures the multi-dimensional concept of health, and health status. The current research further refines the aforementioned studies and in the process adds some new factors such as crowding, and consumption per person in household. Another fundamental difference of the current research and those of Grossman [20], Smith and Kington [21], and Bourne [4, 22] is that it is area specific as it focused on rural residence primarily which majority of the poor in Jamaica, and for any effective health education and private care to take place, this cohort's health status must be explained by way of scientific inquiry. The proposed model that this research seeks to evaluate is displayed below [Eqation (1)]:

Equation 1

$H_t = f\ (P_{mc}, ED, R_t, A_t, Q_t, HH_t, C, E_n, MS, HI, HT, SS, LL, X, CR, DI, O, (\Sigma NP_i, PPi), M, N, FS, A_i, \varepsilon_i)$ ……..(1)

The variables were identified from the literature [Equation 1], and using the principle of parsimony only those explanatory variables that are statistically significant (ie. $p< 0.05$) were used in the final model as only those factors can be used to predict current good health status of men in rural Jamaica. Hence the final model that speaks to self-reported good health of rural men Jamaicans is displayed in Eq[2]..

Equation 2

$H_t = f\ (\ln P_{mc}, R_t, MS, HI_i, N_i, O, \varepsilon_i)$ ……..(4)

The current good health status of a rural resident, H_t, is a function of 12 explanation variables, where H_t is current good health status of person i, if good or above (i.e. no reported health conditions four week leading up to the survey period), 0 if poor (i.e. reported at least one health condition); lnP_{mc} is logged cost of medical care of person i; R_t is retirement income of person i, 1 if receiving private and/or government pension, 0 if otherwise; marital status, MS; HI_i is health insurance coverage of person i, 1 if have a health insurance policy, 0 if otherwise; and N_i is number of children in household of person i; and ownership of durable goods (including land and property)

Measure

Some of the variables in the model are explained. Health status is a dummy variable, where 1 (good health) = not reporting an ailment or dysfunction or illness in the last four weeks, which was the survey period; 0 (poor health) if, there were no self-reported ailment, injury or illness. While self-reported ill-health is not an ideal indicator of actual health conditions as people may underreport their health condition, it is still an accurate proxy of ill-health and mortality [23,24]. Social support (or network) denote different social networks with which the individual has or is involved (1= membership of and/or visits to civic organizations or having friends that visit

one's home or with whom one is able to network, 0=otherwise). Age group was classified into three groups. These were young adults (ages 15 to 30 years), other adults (31 to 59 years) and elderly (60+ years).

Statistical analysis

Statistical analyses were performed using Statistical Packages for the Social Sciences (SPSS) 16.0 software for Widows. Descriptive statistics include frequency, mean and standard deviation that were used to provide background information on the sample. A single hypothesis was tested, which was 'health status of rural men is a function of demographic, social, psychological and economic variables.' The enter method in logistic regression was used to test the hypothesis in order to determine those factors that influence health status of rural residents. The logistic regression used as dependent variable is a binary one. The final model was established based on those variables that are statistically significant (ie. $P < 0.05$), and all other variables were removed from the final model ($P > 0.05$). Continuing, categorical variables were coded using the 'dummy coding' scheme.

The predictive power of the model was tested using Omnibus Test of Model and Hosmer and Lemeshow [25] was used to examine goodness of fit of the model. The correlation matrix was examined in order to ascertain whether autocorrelation (or multi-collinearity) existed between variables. Bryman & Cramer [26] stated that correlation can be low/weak [0 to 0.39]; moderate [0.4-0.69], or strong [0.7-1.0]. This was used in this study to exclude (or allow) a variable in the model, and the correlation matrix was used to examine these. Any variable that had a correlation that was moderate to strong was excluded from the model. Another criterion for exclusion (or inclusion) was response rate of a rate. A variable that had a non-response rate in excess of 20% was excluded from the model. Finally, Wald statistics was used to determine the magnitude (or contribution) of each statistically significant variables in comparison with the others, and the odds ratio (OR) for the interpretation of significant variables.

Results: Demographic Characteristic of Sample

Of the sampled respondents (n=5,041), 98.2% of them reported an age. Of those who reported an age, 39.0% were young adults (ages 15 to 30 years), 41.8% other adults (ages 31 to 59 years) and 19.2% elderly (ages 60+ years). Some 83.0% (n=4,087) of sample reported good health compared to 17.0% (n=838) with poor self-reported health. Only 61.6% (n=371) of those who had indicated poor health visited a health practitioner in the last 4 weeks of the survey period; and 96.0% of those with self-reported health conditions claimed they had purchase medication with only 45.3% mentioned that they completed 'taking the prescribed medication'. Continuing, of those who responded to the health insurance question, 4.9% (n=241) had private coverage.

Result: Multivariate Regression

Of the 15 identified variables that were tested in this study, 6 of them were found to be statistically significant ($P < 0.05$) for the final model (Equation 2). These determine good self-reported health status of rural men in Jamaica. Using logistic regression analyses, the predictors of good health status of rural men in Jamaica are cost of medical care (OR=0.916, 95% CI=0.841-0.997), retirement income (OR=0.0.382, 95% CI=0.206-0.707), marital status – separated, divorced or widowed with reference to those never married (OR=0.270, 95% CI=0.178-0.410), and married with reference to never married men (OR=0.465, 95% CI=0.356-0.609)- health insurance coverage (OR=0.041, 95%

CI=0.027-0.063), number of children in household (OR=1.200, 95% CI=1.069-1.347), and the number of durable goods owned by the man (OR=1.107, 95% CI=1.050-1.166) (Table 3).

The model had statistically significant predictive power (Omnibus Test χ^2 (18) =507.07, $P < 0.001$; n = 2824; Hosmer and Lemeshow goodness of fit χ^2=5.321 (8), P = 0.72) and correctly classified 87.6% of the sample (Correct classification of cases of good or beyond health status =98.4% (N=2,339) and correct classification of cases of with dysfunctions 30.4% (N=136). The logistic regression model can be written as: Log (probability of good health of rural men in Jamaica) = 2.673 – 0.963 R_t (retirement income) – 0.088lnP_m (logged medical expenditure) – 1.309 MS1(marital status if divorced, separated or widowed) – 0.765 MS2 (marital status if married) – 3.187 HI_i (health insurance) + 0.182 N_i (number of children in household) + 0.101 O (ownership of durable assets excluding property and land) (Table 3).

Discussion

Jamaica is among Caribbean societies and developing countries in which men view health as sickness. Their image of sickness is synonymous with health and weakness; and in keeping with the machoism of these men, they are less likely to attend health care facilities for preventative care as this is an indicator of weakness. Health which is broader than disease (or sickness) is still case in many developing nations. Oftentimes, they become active participants in addressing their health conditions when the problems have become chronic and leading to death, incapacitation from employability, livelihood or sexuality. This explains why men in the Caribbean and in particular Jamaica are less likely to take prostate examination as the process is carried out through inserting the finger in the anus, and why sexual dysfunctions are kept in silence. This is not limited to Caribbean men, as Viagra is the leading sold medicine in world, suggesting the that sexual dysfunction is not only weakness for men but that it indicates how manhood is defined and uphold in many societies.

Many men are only willing to visit health practitioners in an event that the ailment or disability is severe and extensive and may result in death. Their first point of contact in case of dysfunctions or that they perceive that ill-health, is occurring is to use self-care or 'self-medication compared to women who are eager and willing to seek health-care on the smallest of perceived symptom of ill-health and even for preventive care. A group of researchers found that men are only willing to report life threatening diseases like heart diseases; this is also reiterated by Low et al. [27] who argued that even when men suffer from erectile dysfunction only 10.5% of them sought help. These barriers to health-seeking behaviour are all embedded in one's beliefs, which could be as a result of perceived personal control of the situation, level of optimism [28], ethnic background and level of risk taking. These cultural happenings are not limited to Jamaica as a study conducted in Malaysia shows a similar health-seeking behaviour as in Jamaica and in Pakistan. Low and colleague [27] cite that:

Erectile dysfunction (ED) is a common sexual disorder affecting men. Although new treatments for ED have emerged for many years, this does not directly translate into men actively seeking treatment for their ED problem.

A substantial aspect to this is the emphasis that is placed on biomedical treatment, and perception of people as issues that are classified as health related. This is even evident in how information is collected on health; how health is measured in many studies, and how people internalize those

symbols. This explains how the society deals with particular health-related matters. Low et al. stated that "some men did not see ED as a medical problem, while others accepted it as a normal consequence of aging" [27]. But still the reality lingers, health is substantially seen as a biomedical phenomenon – that is, communicable diseases, maternal and prenatal conditions, and nutritional deficiencies and non-communicable diseases as the causes of changes to health status and/or death.

Now, what constitute good health of rural men in Jamaica? In this study, self-reported health status was used to examine health of rural men. Is this a good measure? Self-rated health is a complex variable that captures multiple dimensions of the relation between physical health and other personal and social characteristics. It is very consistent in its capacity to predict mortality [29]. It has also been strongly associated with successful aging [30].

The current study revealed that 83.0% of Jamaicans claimed good health. What determines this good self-reported health? Good self-reported health of rural men in Jamaica are determined by cost of medical expenditure, retirement income, marital status, health insurance, number of children in household and ownership of durable goods (excluding property and land). Of the 6 predictors of good self-reported health of rural men, only 2 of them positively influence good health. These are number of children in household and ownership of durable goods. Continuing, the current study revealed that young children (ages less than 14 years) not only positively determine good health of rural men but that for each additional children that is in the household, good self-reported health status is likely to increase by 1.2 times and that good health will increase by 1.1 times for more durable goods owned by the rural man. Other studies have shown that wellbeing is increased by material resources [30,31], which this study concurs with; and that children positively determine good health (or wellbeing). This explains why rural residents have more children than urban families in Jamaica.

In 1997, the prevalence of poverty in the nation was 19.9%. Of the prevalence of poverty in the island, rural poverty was 2.95 times more than that of urban poverty (9.3%) and 1.85 times more than that of poverty in Other towns (14.8%). One decade after 1997 (ie 2007), the nations' poverty fell by 50.3% (to 9.9%) and although rural poverty fell by 44.2% (to 15.3%), it was 3.83 times more than poverty in Other Towns and 2.47 times more than urban poverty. Despite the reduction in prevalence of poverty in Jamaica and rural areas, it is approximately 4 times in 2007 than in 1997. It is this reality that encourages increased fertility and more children in rural area, and contribution that they make to the future economic livelihood of households in rural areas. Keister [32] study finds a strong association between family size and wellbeing in adult years, which means that for each additional child that a family has, this increase the future economic wellbeing of the family which is concurred by this study; and this was also the finding of another study [33]. In this case in Jamaica, children who are less than 15 years old are unable to work, and so their positive influence on rural men's good health is of a psychosocial nature. Some people conceptualize childbearing as a vehicle of social mobility, and some consider their offspring as material resources in their old age. Within the psyche of the poor, poverty alleviation is seen through the investment in child/ren, and this is seen as investing in stocks, bonds, shares or other physical assets; which speaks to the current psychosocial benefits of children.

Health insurance coverage is a product

people use for futuristic health conditions. Here in this study, a rural man is 0.041 times less likely to have good health. This finding reveals that health insurance is a precautious measure instead of a preventative one. Rural men buy private health insurance in Jamaica owing to the high likeliness of ill-health. Hence, health insurance coverage is not a good indicator of preventative health but of curative health; as rural men's good health is not improved with the purchase of this product. Similarly, the current research revealed that those who spent more on medical care are 0.916 times less likely to have good health, and that expenditure on medical care is to restore good health and that is not a preventative approach to health care for rural men. This is contrary to studies done by Bourne [4, 22] which found that spending on medical care was positively associated with wellbeing.

It is well established in research literature that married men have a greater wellbeing than the non-married. In Smith & Waitzman's work [34], they added that men's gains from marriage were greater than that of women. This, then, explain why the some scholars made the statement that "many observers have theorized that married individuals have access to more informal social support than do non-married individuals", which explains a social reality of higher quality of life of married couples than 'non-married' individuals. Studies have shown that married people have a lower mortality risk in the healthy category than the 'non-married' [35], and this justifies why they take less life-threatening risks.

Using a sample of 1049 Austrians from ages 14 years and over, Prause et al. [36] found that married individuals reported better subjective health-related quality of life index (8.3) than divorced persons (7.6) or singles (7.7). Smock and colleagues [37] concurred with Prause et al and other studies that there was a direct relationship between married women and economic wellbeing. Drawing a longitudinal data from the National Survey of Families and Households for 1987-1988 (NSHH1) and a follow-up survey (NSFH2) of some 13, 008, a sample size of 2665 females from 60 years and older were used. Each study had a response rate of approximately 74 percent for NSFH1 and 82 percent for NSFH2. The research revealed that married women had a higher economic wellbeing than divorced females. It was found that females who were remarried experienced an equally high wellbeing as their married counterparts, which was higher than that experienced by single females. Smock, Manning and Gupta reported that divorced women like their married counterparts; found that educational attainment and work experiences were positively associated with wellbeing.

Notwithstanding the plethora of studies that have shown correlation between married people being healthier, Lillard & Panis [38] contradicted all those traditional findings. Firstly, they found that healthier men are less likely to be married; and secondly, that healthier married men enter into this union later in life and that they do postpone remarriage. Conversely, Lillard and Panis revealed that it is unhealthy men that enter marriage at an early age, which suggest that these men do so because of health reasons [43]. Their survey was in itself a contradiction of works that establish the positive correlation between marriage and wellbeing. This study concurs with Lillard and Panis as it found that rural men who were never married were more likely to report good health compared to married or divorced men.

Another important finding that emerged from this research is the negative statistical correlation between those who received retirement income and good self-reported health status of rural men. This may appear paradoxical as more income should mean

greater wellbeing [32,39]. According to Keister [in an article titled *Sharing the Wealth: The effect of sibling on adult's wealth ownership,* forwarded that] there is "…little doubt that material resources can improve quality of life and well..." [32]. Wellbeing, therefore, can be improved with time through material resources. Easterlin [40, 41] argued that material resources have the capacity to improve one's choices, comfort level, state of happiness and leisure, which mitigate against static wellbeing. Retirement is indeed income, but it is receive primarily by those who have reached the age of 65+ years for men, and so presents a cohort of men who are less likely to be in good self-reported health compared to younger men. Continuing, rural men who received retirement income were 0.382 less likely to report good health in comparison to those who have not received this benefit; and that this was the least predictor of good health status of the study.

One of the approaches that must be forwarded from here onwards is the need to re-culturized health practitioners and health researchers on their views and image of health, health care, and wellness of rural men. A group of Caribbean scholars cited that "wellness involves the different measures that we use to maintain good health and is geared towards preventing illness and diseases"…This is definitely a positive approach to health care rather than focusing only on treating and curing diseases [42]. The authors gave a conceptual framework of the approach to take for good health in Jamaica, but this lacks specificities for rural residents or rural men. Like Davidson, Wright and Lowe [42] and the WHO[4] in this study the researcher provides the predictors of good health of rural men in Jamaica; and equally showed the role of social determinants in determining good health. It is well established in health literature that social determinants are significant in predicting health (or wellbeing) of a populace or a sub-population, and that these factors account for health improvements as reduction in disease causing pathogens.

Conclusion

In summary, good self-reported health status of rural men is a function of health insurance coverage, marital status, number of children in household, retirement income and ownership of durable goods (excluding property and land). This study has provides invaluable insights into factors that determine good health status of rural men, and within this reality health care practitioners can forge programmes that will address health concerns of this cohort now that research is available on the group. One of the means of raising the health of a population is to address the health concerns of the poor, and in Jamaica this is rural residence. Moreover, men continue to seek less care than women, and when this is added to space of rural people, on an average rural men who are poor would be both, would seek less health care. Within these realities, this study provides the platform for addressing the health gaps that currently exists in the population among rural men. This must be an important policy goal, as effective policies which seek to address improvements in health must address the health inequalities that exist in rural Jamaica in particular rural men.

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Table 1: Seeking Medical Care, Self-reported illness, and Gender composition of those who report illness and Seek Medical Care in Jamaica (in percentage), 1988-2007

Year	Seeking Medical Care	Health Insurance Coverage	Seeking Medical Care - Men	Seeking Medical Care - Women	Reporting Illness-Men	Reporting Illness-Women	Mean Days Of Illness Men	Mean Days Of Illness Women
1988	NI	NI	NI	NI	NI	NI	NI	NI
1989	54.6	8.2	44.7	52.8	15.0	18.5	10.6	11.1
1990	38.6	9.0	37.9	39.2	16.3	20.3	10.2	10.2
1991	47.7	8.6	48.5	47.4	12.1	15.0	10.0	10.3
1992	50.9	9.0	49.0	52.5	9.9	11.3	10.7	10.9
1993	51.8	10.1	48.0	54.7	10.4	13.5	10.7	10.1
1994	51.4	8.8	49.0	53.4	11.6	14.3	10.3	10.4
1995	58.9	9.7	59.0	58.9	8.3	11.3	10.6	10.7
1996	54.9	9.8	50.5	58.5	9.7	11.8	10.0	11.0
1997	59.6	12.6	60.0	59.3	8.5	10.9	11.0	10.0
1998	60.8	12.1	57.8	62.8	7.4	10.1	11.0	11.0
1999	68.4	12.1	64.2	71.1	8.1	12.2	11.0	11.0
2000	60.7	14.0	57.4	63.2	12.4	16.8	9.0	9.0
2001	63.5	13.9	56.3	68.2	10.8	15.9	9	10
2002	64.1	13.5	62.1	65.3	10.4	14.6	10.0	10.0
2003	NI	NI	NI	NI	NI	NI	NI	NI
2004	65.1	19.2	64.2	65.7	8.9	13.6	11.0	10.0
2005	NI	NI	NI	NI	NI	NI	NI	NI
2006	70.0	18.4	71.7	68.8	10.3	14.1	9.7	10.0
2007	66.0	21.2	62.8	68.1	13.1	17.8	10.6	9.3

Source: Jamaica Survey of Living Conditions, various issues

NI - No Information was available

Table 2: Demographic characteristics of sampled population – Rural residence in Jamaica

Variable	n (%)
Age group	
Young Adults	1968 (39.0)
Other Adults	2015 (41.8)
Elderly	968 (19.2)
Retirement income	
No	4922 (98.0)
Yes	103 (2.0)
Health status	
Poor	838 (17.0)
Good	4087 (83.0)
Health insurance coverage	
No	4658 (95.1)
Yes	241 (4.9)
Per capita income quintile	
Poorest	1012 (20.1)
Poor	1034 (20.5)
Middle	1071 (21.2)
Wealthy	1006 (20.0)
Wealthiest	918 (18.2)
Social support	
No	2370 (54.2)
Yes	2371 (45.8)
Educational level	
Primary and below	1032 (23.3)
Secondary	3287 (74.2)
Tertiary	108 (2.4)
Marital status	
Married	1228 (25.5)
Never married	3401(66.6)
Divorced, separated or widowed	241 (4.9)
Physical Environment	
No	3970 (79.8)
Yes	1003 (20.2)
Visited Health practitioner	
Yes	371 (61.6)
No	231 (38.4)
Purchase Prescribed Medication	
Yes	339 (96.0)
No	14 (4.0)
Completed the Medication	
Yes	167 (45.3)
No	202 (54.7)

Table 3: Logistic regression of rural health of Jamaican Men by Some explanatory variables

Variables	Coefficient	Std. Error	Wald statistic	*P*	Odds Ratio	95.0% C.I Lower	95.0% C.I Upper
Retirement Income	-0.963	0.314	9.394	0.002	0.382	0.206	0.707
Middle Quintile	0.172	0.172	1.007	0.316	1.188	0.848	1.664
Two Wealthy Quintiles	-0.138	0.173	0.637	0.425	0.871	0.621	1.222
Poor quintile*							
Household Head	-0.020	0.595	0.001	0.973	0.980	0.305	3.145
Logged Medical Expenditure	-0.088	0.043	4.153	0.042	0.916	0.841	0.997
Separated or Divorced or Widowed	-1.309	0.213	37.938	0.000	0.270	0.178	0.410
Married	-0.765	0.137	31.069	0.000	0.465	0.356	0.609
Never Married*							
Health Insurance	-3.187	0.213	224.844	0.000	0.041	0.027	0.063
Physical environment	0.023	0.131	0.031	0.861	1.023	0.792	1.323
Secondary	0.040	0.140	0.082	0.775	1.041	0.791	1.370
Tertiary	0.317	0.438	0.522	0.470	1.373	0.581	3.240
Primary and below*							
Social support	-0.213	0.119	3.198	0.074	0.808	0.640	1.021
Crowding	-0.003	0.084	0.001	0.970	0.997	0.846	1.175
Land ownership	-0.247	0.134	3.405	0.065	0.781	0.601	1.015
Number of female in household	-0.023	0.070	0.106	0.745	0.978	0.853	1.121
Number of child in household	0.182	0.059	9.532	0.002	1.200	1.069	1.347
Ownership of durables	0.101	0.027	14.420	0.000	1.107	1.050	1.166
Average Consumption	0.000	0.000	1.851	0.174	1.000	1.000	1.000
Constant	2.673	0.712	14.096	0.000	14.488		

Omnibus Test χ^2 (18) =507.07, $p < 0.001$; n = 2824
-2 Log likelihood = 1963.42
Hosmer and Lemeshow goodness of fit χ^2=5.321 (8), p = 0.72.
Nagelkerke R^2 =0.282
Overall correct classification = 87.6% (N=2,475)
Correct classification of cases of good or beyond health status =98.4% (N=2,339)
Correct classification of cases of with dysfunctions =30.4% (N=136);
*Reference group