

## Public Hospital Health Care Utilization in Jamaica

Paul Andrew Bourne Dip Ed, BSc, MSc, PhD, Denise Eldemire-Shearer, MBBS, PhD.

Department of Community Health and Psychiatry Faculty of  
Medical Sciences, Mona, Kingston and Jamaica W.I.

Department of Community Health and Psychiatry Faculty of  
Medical Sciences, Mona, Kingston 7, Jamaica W.I.

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**Abstract:** Objective: Health is a crucible component in any discussion on development, and public-private hospital health care utilization accommodates this mandate of governments. The aim of the current study is to examine factors that account for people's public hospital health care facilities utilization in Jamaica, and to ascertain whether is a difference between public hospital care utilization and income quintile and area of residence. Method: The current study has extracted a sub-sample of 1,936 respondents from a national survey of 25,018 respondents. The sub-sample constitutes those respondents who had indicated visits to public hospital facilities for health care or private hospital health care facilities owing to self-reported ill-health. It is taken from a larger cross-sectional survey which was conducted between June and October 2002. It was a nationally representative stratified probability survey of 25,018 respondents. The data were collected by a comprehensive self-administered questionnaire, which was primarily completed by heads of households on all household members. The questionnaire is adopted from the World Bank's Living Standards Measurement Study (LSMS) household surveys and was modified by the Statistical Institute of Jamaica with a narrower focus and reflects policy impacts. Chi-square, t-test and analysis of variance (ANOVA) were used for bivariate relationships, and logistic regression was used to explain factors that determine who attended public hospital health care facilities. Findings: The current findings revealed that 6 factors determine 35.6% of the variability in visits to public hospital health care facilities utilization in Jamaica. Two major findings from this study are 1) health seeking behaviour and health insurance coverage are the two most significant factors that determine public hospital health care facilities utilization, and that 2) the two aforementioned factors and positive affective conditions inversely correlate with public hospital health care facility utilization. In addition to the above, there is no statistical difference between the utilization of public hospital health care facilities and area of residence while lower income quintile becomes the greater public hospital health care facilities utilization has been. Conclusion: The demands for public hospital health care facility utilization in Jamaica are primarily based on inaffordability and low perceived quality of patient care. The issue of low quality of patient care speaks not to medical care, but to the customer service care offered to clients. The greater percentage of Jamaicans who access private health care is not owing to plethora of services, higher specialized doctors, more advanced medical equipment, or low, but this is due to social environment – customer service and social interaction between staffers and clients- and physical milieu – more than one person per bed sometimes, uncleanliness of the facilities.

**Key words:** Public-private hospital health care utilization, Public health care demand, Health care facility utilization, Jamaica

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### INTRODUCTION

Health is a crucible component in development. The health status of a people does not only mean personal development; but also greater economic development for the nation. As healthier people are more likely to produce greater output than those who are ill, accounting for higher productivity and efficiency. Ill/injury means in-voluntary absenteeism which accounts again for lowered production. A substantial part of a country's Gross Domestic Product (GDP) per capita each year is loss to illnesses. The WHO has forwarded that between

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**Corresponding Author:** Paul Andrew Bourne, Health Research Scientist, Dept of Community Health and Psychiatry, Faculty of Medical Sciences, The University of the West Indies, Mona, Jamaica.  
Email: paulbourne1@yahoo.com. Tel:(876) 467-6990.

3 and 10 years of life is loss owing to illnesses (1,2), suggesting that illness reduces not only output by quality of life. Hence, it is not important for observed length of life (ie. life expectancy), but it is imperative to take into consideration loss years owing to illness which means the measure of importance will be health life expectancy. And so, the public health facility can accommodate this mandate of governments. While private health care facilities supply a demand for health care, the average citizen in many countries is unable to afford the medical expenditure of those facilities and so the public care facility is not only the access of the average person is the bedrock upon which the health care system of the society relies.

Public-private hospital health care utilization in Jamaica for over the last 11-years (1996 to 2006) has been narrowing, suggesting that economic wellbeing of population has been falling as the economic cost of survivability has been increasing and this explain the narrowing gap seeing in the hospital health care facility utilization (Figure 1). It is noted in the data that there is decline in medical care seeking behaviour of Jamaicans in 2006 from 70% to 66% in 2007 (In Table 2). Although there is an increasing demand of public hospital health care facilities utilization by those who seek medical care (Table 1), within the context of an increase in self-reported illness (by 3.3%) coupled with the dialectic of reduction in medical care seeking behaviour, and decline in public health utilization (including clinics, Table 1), there is still a positive sign as there was increase in health insurance coverage (from 21.2% in 2007 over 18.4% in 2006).

In 2007 inflation increased by 194.7% over 2006 and accounts for this narrowed gap between public and private utilization of health care in Jamaica. The exponential increase in inflation (194.7%) has accounted for higher cost of living of Jamaicans and has rationalized the decline in private health utilization and the switching to public health care utilization (Table 3). Furthermore, this goes to the core of the drastic reduction in the bed occupancy at public hospital health care facilities in 2004 over 2003 (by 33.7%), suggesting that the poor's medical care seeking behaviours are significantly affected in tough times. This is further accounted for in the fact that data on private facilities utilization for those in the poorest quintile fell by 36.1% in 2007 over 1991 and 37.1% for those in the poor quintile over the same period, while there was an increase in public facilities utilization for those in the poorest quintile (by 29.8%) and by 53.6% for those in poor quintile for the same period.

Inflation is not the only economic impediment that is affecting health care utilization in Jamaica, as looking at the data on remittances which accounted for the single largest foreign exchange receipt in the nation, this fell by 7.7% in 2007 over 2006 (Figure 2). The poor and the poorest were the most affected by the decline in remittances as rate was 22.1% and 16.9% respectively. Despite the reduction in remittances in Jamaica, 41.8% of Jamaican received monies this way, which means that a 7.7% decline of those people whom received remittance affect some 206,522 Jamaicans which include the most vulnerable such as the poor, children, unemployable elderly and youths. When inflation is coupled with reduction in remittances, given that remittance substantially contribute to the economic income for the poor and the poorest quintile more than the other upper quintiles, this mean that health and health seeking behaviour in the poor-to-the-poorest people will take a back seat to consumption expenditure on food and non-alcoholic beverages (3).

Comparatively there has been a marginal increase in private health care facilities utilization by 6.5% of those in the wealthiest quintile, a substantial increase (by 31%) for those in the wealth quintile (quintile 4), and a mild decline by 0.47% for those in quintile 3 (middle quintile). Nevertheless, there is a 3.9% increase in public health care facilities utilization for those in the wealthiest quintile, while the middle to wealth quintiles showed increases. Therefore, emerging from these findings is a particular social profile of people who attend public health care facilities in Jamaica as in excess of 62% of those in middle-to-wealthiest quintiles attended private health care facilities compared to 66% and more of those in the poor-to-poorest quintile (Table 3).

In 2007, 50.7% of those in the poorest quintile indicated that they were unable to afford to seek health care for ill/injury compared to 36.7% of quintile 2, 34.4% in quintile 3, 21.4% in quintile and 7.1% of those in the wealthiest quintile. Adults sometimes may not attend medical facilities for care, but they will take their children because they are protective of them. This is revealing about affordability as in 2007, 51.7% of those in the poorest quintile indicated that they sought medical care for their children (0-17 years), 52.7% in quintile 2, 61.2% in quintile 3, 61.8% in quintile 4 and 67.6% in the wealthiest quintile. Is in-affordability an issue in medical care utilization for those in the poorest to poor quintiles?

The mean annual amount spent on 'food and beverage' in 2002 by those in the poorest quintile was 50.4 per cent compared to 38.1 per cent of those in the wealthiest quintile. The mean annual amount expended on the same in 2006 rose by 3.6 per cent for those in the former quintiles compared to reduction of 0.1 per cent for those in the latter group. (3). Medical expenditure which is a constituent of non-consumption expenditure was 2.2% for those in the poorest quintile (in 2006) compared to 13.5% of wealthiest quintile. The economic

well-being of the poor and the poorest in the population has become even more gravely as this is reflected in the inflation rate as it increased by 3 times for 2007 over 2006 (4). While the downturn of the United States economy in particular the Jamaica economy has more than one-half since 2006 (growth in GDP at Constant (1996) prices in 2006 2.5 per cent and 1.2 per cent in 2007), those in the poorest quintiles are hard hit by this economic recession, explaining the rationale for the switching to home care or more public care.

All the aforementioned arguments omit area of residence, suggesting that this is the same across geographical boundaries. Poverty has been declining since 1991 from 44.6%, when inflation rate was at the highest in the history of the nation (80.2%), to 9.9% in 2007. However, rural poverty which was 71.3% in 2007 saw an 8.5% increase over 2006 (65.7%) within the economic environment of a drastic increase in inflation, cost of living and prices of non-consumption items such as medical care. When we take into consideration the reduction of remittance by 8.7% in 2007 over 2006 (42.3%) and fact that 67% of the elderly (people age 60+ years) dwell in rural zones, remittance represents not only an income but economic living. Is this accounting for any of the narrowing of the gap between public-private hospital health care facility utilization? And what are the factors which explain public hospital care facilities utilization in Jamaica? This is the first study in the English speaking Caribbean and in particular Jamaica to seek to examine conditions that explain public hospital health care facility utilization. Hence, the aim of the current study is to examine factors that account for choice of public hospital care facilities utilization and to ascertain whether there is a difference between public hospital care utilization and income quintile and area of residence.

## **MATERIAL AND METHOD**

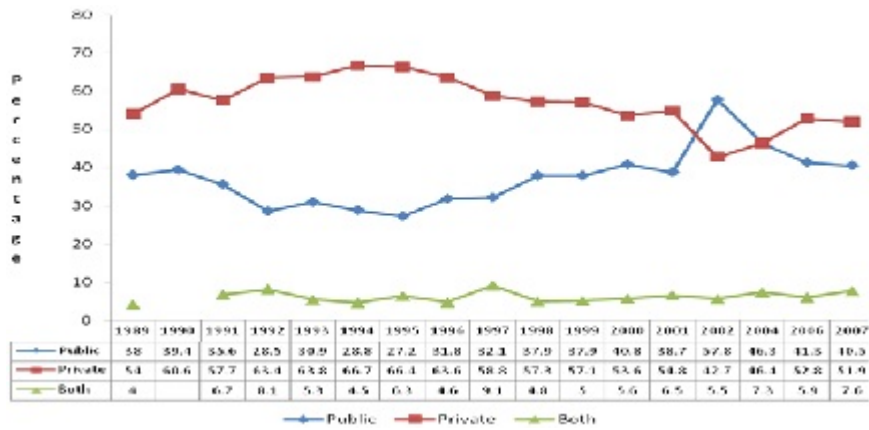
The current study extracted a sub-sample of 1,936 respondents from a national survey. The sub-sample constitutes those respondents who indicated having visited public and private hospital health care facilities for medical treatment owing to ill-health. The sample is taken from a larger cross-sectional survey, which was conducted between June and October 2002. It was a nationally representative stratified probability survey of 25,018 respondents. The sample (N=25,018 or 6,976 households out of a planned 9,656 households) was drawn, using a 2-stage stratified random sampling technique, involving a Primary Sampling Unit (PSU) and a selection of dwellings from the primary units. The PSU is an Enumeration District (ED), which constitutes a minimum of 100 dwellings in rural areas and 150 in urban zones. 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 PSU, a listing of all the dwellings were made and this became the sampling frame from which a Master Sample of dwellings were compiled and which provides the frame for the labour force. The survey adopted was the same design as that of the labour force.

The national survey was a joint collaboration between the Planning Institute of Jamaica and the Statistical Institute of Jamaica. The data were collected by a comprehensive self-administered questionnaire, which was primarily completed by heads of households on all household members in Jamaica. The questionnaire was adopted from the World Bank's Living Standards Measurement Study (LSMS) household surveys and was modified by the Statistical Institute of Jamaica with a narrower focus and reflects policy impacts. The instrument assessed: (i) general health of all household members; (ii) social welfare; (iii) housing quality; (iv) household expenditure and consumption; (v) poverty and coping strategies, (vi) crime and victimization, (vii) education, (viii) physical environment, (ix) anthropometrics measurement and Immunization data for all children 0-59 months old, (x) stock of durable goods, and (xi) demographic characteristics.

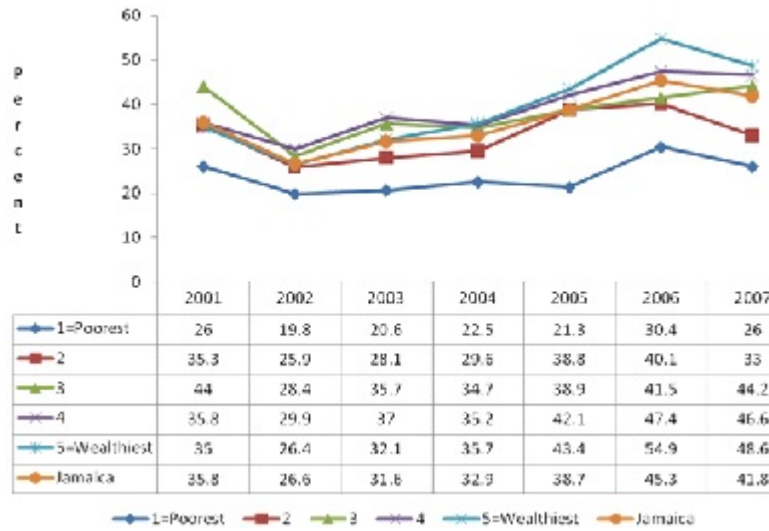
Data were stored and retrieved in SPSS 15.0 for Windows. The current study is explanatory in nature. Descriptive statistics were forwarded to provide background information on the sampled population. Following the provision of the aforementioned demographic characteristics of the sub-sample, chi-square analyses were used to test statistical association between some variables; t-test statistics and analysis of variance (ie ANOVA) were also used to examine the association between a metric dependent variable and either a dichotomous variable or non-dichotomous variable respectively. Logistic regression was used to examine the statistical association between a single dichotomous dependent variable and a number of metric or other variables (Empirical Model). In order to test the association between a single dichotomous dependent variable and a number of explanatory factors simultaneously, the best technique to use was logistic regression.

### ***Empirical Model:***

Given a plethora of factors that simultaneously affect health care visits, the use of bivariate analyses will not capture this reality. Therefore, in order to capture those factors that influence visits to public hospital health care facility, we used a logistic regression instead. The regression model examines several factors that might affect visits to public health care facilities.



**Fig. 1:** Public-Private Health Care Utilization in Jamaica (in %), 1996-2002, 2004-2007  
 Source: Taken from Jamaica Survey of Living Conditions, various issues



**Fig. 2:** Remittances By Income Quintiles and Jamaica (in Percent): 2001-2007  
 Source: Extracted from the Jamaica Survey of Living Conditions, 2007

The data source was from the Jamaica Survey of Living Conditions of 2002 on health, consumption, social programme, physical environment, education, public-private hospitalization utilization, and crime and victimization. The rationales for the use of 2002 data were (1) it was the second largest national representative survey that was conducted in the history of data collection by the Statistical Institute of Jamaica and the Planning Institute of Jamaica to assess policy impacts (25,018 respondents), and (2) it was inclusive of issues on crime and victimization, and physical environment that were not in the post-2002 survey, nor the preceding years. Although there are more recent data (2004 to 2007), these have excluded many of the factors that are present in the 2002 data (that is physical milieu, crime, victimization and mental health), and wanting to establish factors that influence health care, we needed more possible factors that less as well as crime and victimization as these are crucible issues that have been facing the country increasingly since 2002.

Ergo, the 2002 consist of more possible factors that determine people’s decision to visit public hospital health care facilities utilization compared to private hospital health care facilities utilization. Explanatory factors include psychological factors conditions self-reported health insurance coverage; area of residence; educational level; and other variables. The basic specification for the model was:

$$VPHCF_i = f(\alpha_j i DEM_i, \beta_j i PSY_i, P_{mcis}, \pi SS_i, \gamma_j i HSB_i, \epsilon_i) \tag{1}$$

Where VPHCF<sub>i</sub> is visits to public or private hospital health care facilities of person *i* is a function of

demographic vector factors,  $DEM_i$ ; psychological factors of person  $i$ ,  $PSY_i$ ; medical expenditure,  $P_{mc}$ ; social support of individual  $i$ ,  $SS_i$ ; health seeking behaviour of person  $i$ ,  $HSB_i$ ;  $\epsilon_i$  is the residual term.  $\alpha_j$ ,  $\beta_j$ ,  $\gamma_j$ , are coefficient vectors for person  $i$  of variables  $j$  and  $i$ ,  $\pi$ , are coefficient of vector for person  $i$ .  $VPHCF_i$  is a binary variable, where 1= self-reported visits for public hospital health care facilities for medical care and 0=self-reported visits to private hospital health care facilities. [I am not so clear on this sentence].

**Measure:**

Public Hospital Health Care Utilization variable measures the total number of self-reported cases of visit to either public hospital health care facilities or private hospital health care facilities in the last 4-weeks (whereby the survey period is used as the reference point). Public Hospital Health utilization was dummied to read 1=visits to public hospital health care facilities, and 0=private hospitals health care facilities.

Income Quintile Categorization. This variable measures the per capita population income quintile that each individual is categories. There are 5 categories, from the poorest to the wealthiest income quintile. For the purpose of the regression analysis, the variable was measured as:

1= Middle Quintile, 0=otherwise

1=Two Wealthiest Quintiles,0=otherwise

The referent group is the two poorest income quintiles

Crowding. This is the total number of persons living in a room with a particular household.

$$Crowding = \sum_{i=1}^n \frac{h_i}{r}$$

where  $h_i$  represents each person in the household and  $r$  is the number of rooms

excluding kitchen, bathroom and verandah.

Age: This is a continuous variable in years, ranging from 15 to 99 years.

Positive Affective Psychological Condition: Number of responses with regards to being optimistic about the future and life generally.

Negative Affective Psychological Condition: Number of responses from a person on having loss a breadwinner and/or family member, loss of property being made redundant, failure to meet household and other obligations.

Private Health Insurance Coverage (or Health Insurance Coverage) proxy Health Seeking Behaviour is a dummy variable which speaks to 1 if self-reported ownership of private health insurance coverage and 0 if did not report ownership of private health insurance coverage.

Health Seeking Behaviour. Visits to health care practitioners outside of illnesses, dysfunctions, and injuries. This is a binary variable where 1 = self-reported seeking medical care and 0 = not reporting seeking medical care.

**RESULTS AND DISCUSSION**

The sub-sample for the current study was 1,936 respondents of which 39.4% were males (N=762) and 60.6% females (N=1,174), suggesting that females are 1.5 times more likely to seek medical care from public or private hospitals compared to males. The findings (indicated in Table 4) revealed that marginally more Jamaicans who visited hospital facilities for medical care went to public facilities (53%, N=1,021). In addition to the aforementioned issues, 56% (N=1,086) of the sample reported health care insurance coverage compared to 44% (N=850) who did not. The mean age of the sample was 44 years (SD=27.5 years). Some 45% of the population were never married (N=671), 36% married (N=532), and 20% were divorced, separated or widowed. Furthermore, Table 4 reveals that two-thirds of the population dwelt in rural Jamaica, 22% (N=424) in Other Towns and 12% Kingston Metropolitan area (N=223).

On the matter of the psychological state of Jamaicans, this was classified into two main conditions - positive and negative psychological conditions. The mean negative psychological conditions of population was 4.9 (out of 16, SD=3.3), suggesting that the negative psychological conditions of the population was low. On the other hand, the mean value for the positive affective psychological condition of the population was 3.2 (out of 6, SD = 2.4) indicating that positive affective conditions of the population was moderate (Table 4).

The examination between public-private hospital health care facility utilization and area of residence found no statistical correlation between the two aforementioned variables -  $\chi^2(2) = 0.385$ ,  $p\text{-value} = 0.825 > 0.05$  - (Table 5). The no correlation between the two conditions indicates that Jamaicans, irrespective of their places of abode attended public-private hospital health care facilities for care of ill-health. (Table 5).

A cross tabulation between visits to health care facilities and per capita population income quintile showed a statistical association -  $\chi^2(4)=157.024$ ,  $p$ -value  $<.001$ . The findings revealed that people in the poorest income quintile was 2.4 times more likely to visit public health care facilities compared to those in the wealthiest per capita income quintile; people in the poorest income quintile was 1.5 times more likely to visit public facilities compared to those in the second wealthiest quintile. However, the findings revealed that those in the second poorest income quintile indicate no statistical difference themselves and those in the middle income quintile - quintile 3 (Table 6). Nevertheless, people in the poorest income quintile were 1.3 times more likely to visit public facilities compared to those in the middle income quintile. There is a substantial difference between those who visit public health institutions, who are in the poorest income quintiles (73.8%,  $N=251$ ) and those in the second poorest income quintile (58.4%,  $N=208$ ). Embedded in the aforementioned finding is the increase in switching from public to private hospital health care facilities the more income quintile shifts to the wealthiest category (Table 6). The aforementioned findings, raise concern about the extent of public-private hospital health care expenditure. Of the sample ( $N=1,707$ ), 912 people visited private hospital health care facilities and reported that they spent on average \$2,977.41 ( $SD=\$4,053.01$ ) compared to \$1,376.12 ( $SD=\$2,547.93$ ,  $N=1,019$ ) for a visit to a public hospital care facility, suggesting that those who attend private hospital health care institutions spent about 2.2 times more than those who visit the public hospital health care facilities. Using t-test analysis, there is a difference between expenditure on public hospital health care and private hospital health care -  $t_{10.5} [1929] = p$ value  $< 0.001$ .

Using analysis of variance (ANOVA), generally, it was found that a statistical association exists between negative psychological conditions and per capita income quintile (F statistic [4, 1926] =28.793,  $p$ -value $< 0.001$ ). (Tables 7.1 – 7.2). Further investigation of the negative affective conditions by per capita quintile revealed that there is no difference between the negative affective psychological conditions of those in three bottom quintiles (quintiles 1 to 3),  $p$ -value  $> 0.05$  (Table 7.2). In addition to the aforementioned issue, there is no difference between the negative psychological state of people in quintiles 3 and 4 ( $p$ -value $>0.05$ ) and quintiles 1, 2 and 3, indicating that negative affective conditions can be classified into 3 groups (1) high for those in quintiles 1, 2 and 3; (2) moderate for quintile 4 and (3) low for those in quintile 5. However those classified in quintile 5 has the lowest negative affective conditions compared to those in the other quintiles ( $p$ -value $<0.001$ ). Embedded in this finding is that as people move to the wealthiest quintile, they experience less negative trauma such as the loss of breadwinner, owing to abandonment, death or incarceration, crop failure, redundancy, loss of remittances, inability to meet household expenses, and less hopeless about the future.

There is statistical association between positive affective psychological conditions and per capita income quintile - F statistic [4,1492] =12.366,  $p$ -value $< 0.001$ . (Table 8.1). Further examination of the two aforementioned variables revealed that there is no statistical difference between the positive affective psychological conditions for those in quintiles 1 and 2; and between quintile 2 and quintiles 3 and 4. Hence the statistical difference in positive affective conditions is between those who are classified into two poorest quintiles and those in the wealthy quintiles (Table 8.2).

Overall, there are statistical differences among health care expenditure of rural, urban and periurban residences in Jamaica – F-statistic [2, 1928] = 4.902,  $p$ value  $< 0.001$ . Rural area dwellers spent on an average \$2,009.98 ( $SD=\$2,999.88$ ,  $N=1286$ ) per visit on medical care compared to peri-urban residents who spent \$2,593.13 ( $SD=\$4,587.67$ ,  $N=423$ ) and \$1,963.68 was spent by urban dwellers ( $SD=\$3,188.31$ ,  $N=222$ ). Further examination revealed that there is a difference between the medical expenditure made by rural residence and those in other towns –  $p$  value  $<0.05$ . The former on an average spent \$583.17 less than those in other towns. However, there are no statistical differences between medical expenditure of urban residents and that of rural dwellers ( $p$ value  $>0.05$ ) and other towns ( $p$ value  $>0.05$ ).

### **Empirical Results:**

The regression analytic model was established in order to simultaneously examine a number of explanatory variables' impact on those who attend public hospital health care facilities for ill-health. Table 6 and Table 7 provide information on empirical model (Eq (1)) and in the process answers the suitability of the model (Table 6), while Table 7 answers to the question of which of the variables are factors and their importance. Before embarking on the report of the regression model which contains all the predisposed variables and which those that are statistical significant (ie  $p$ value $<0.05$ ), we will examine the 'goodness' of fit of the data in regard to the model.

Table 6 reports a 'classification of visits to hospital health facilities owing to ill-health' and contained examination of observed compared to predicted classification of the dependent variable (that is visits to hospital health care facilities in due to negative health). Of the 1,051 respondents that were used to establish the model

(using the principle of parsimony, that is only those variables that have a pvalue < 0.05 will be used in the final model), 73% (N=767) were correctly classified: 71.6% (N=374) of those who visit private hospital health care facilities for care owing to illnesses or injuries and 74.3% (N=393) of those who visited public hospital health care institutions for treatment of dysfunctions or injuries. Therefore, the data is a ‘good’ fit for the model (ie. 73% were correctly classified).

Table 10 contained the answers the empirical model (Eq. (1))

$$VPHCF_i = f(\alpha_jiDEM_i, \beta_jiPSY_i, P_{mc}, \pi SS_i, \gamma_jiHSB_i, \epsilon_i) \tag{1}$$

which shows that 35.6% of the variability in visits to health facilities for care are affected by a number of factors- Chi-square (24) = 326.58, p-value < 0.001, -2Log likelihood = 1130.37. Of all the demographic variables contained in the current study, only total expenditure was found to be a factor of visits to public hospital health care facilities for ill-health (Wald statistic=4.458; OR=1.00: 1.00, 1.00). The cost of medical care was directly related to reason for patients’ visits to public hospital health care facilities for treatment against ill-health (Wald statistic=13.959; OR=1.00: 1.00, 1.00) likewise was the positive statistical relationship between social support and visits to health care facilities (Wald statistic=13.419; OR=1.741: 1.29, 2.34). A direct association was observed between negative affective psychological conditions and visits to public hospital health care facilities. This suggested that more the patients/individuals are impacted upon by the loss of a breadwinner, crop failure, redundancy, loss of remittances.

**Table 1: Discharge, Average Length of Stay, Bed Occupancy and Visits to Public Hospital Health Care Facilities, 1996-2004**

Year	Discharge	Average Length of Stay	Bed Occupancy Rate	Visits to Public Facility
1996	145,656	5.7	56.1	546,933
1997	153,101	5.8	57.3	598,004
1998	158,851	5.5	58.0	634,792
1999	163,714	5.1	52.2	654,746
2000	173,700	4.9	74.9	643,101
2001	171,963	6.0	84.6	667,321
2002	173,614	6.9	80.2	695,239
2003	179,322	6.4	84.5	746,844
2004	182,053	6.8	56.0	775,727
2005	NI	NI	NI	NI
2006	NI	NI	NI	NI
2007	NI	NI	NI	NI

Source: Ministry of Health, Jamaica, Planning and Evaluation Branch, various issues  
NI No information available

**Table 2: Inflation, Public-Private Health Care Service Utilization, Incidence of Poverty, Illness and Prevalence of Population with Health Insurance (in per cent), 1988-2007**

Year	Inflation	Public Utilization	Private Utilization	Prevalence of poverty	Illness	Health Insurance Coverage	Seeking Medical Care	Mean Days of Illness
1988	8.8	NI	NI	NI	NI	NI	NI	NI
1989	17.2	42.0	54.0	30.5	16.8	8.2	54.6	11.4
1990	29.8	39.4	60.6	28.4	18.3	9.0	38.6	10.1
1991	80.2	35.6	57.7	44.6	13.7	8.6	47.7	10.2
1992	40.2	28.5	63.4	33.9	10.6	9.0	50.9	10.8
1993	30.1	30.9	63.8	24.4	12.0	10.1	51.8	10.4
1994	26.8	28.8	66.7	22.8	12.9	8.8	51.4	10.4
1995	25.6	27.2	66.4	27.5	9.8	9.7	58.9	10.7
1996	15.8	31.8	63.6	26.1	10.7	9.8	54.9	10.0
1997	9.2	32.1	58.8	19.9	9.7	12.6	59.6	9.9
1998	7.9	37.9	57.3	15.9	8.8	12.1	60.8	11.0
1999	6.8	37.9	57.1	16.9	10.1	12.1	68.4	11.0
2000	6.1	40.8	53.6	18.9	14.2	14.0	60.7	9.0
2001	8.8	38.7	54.8	16.9	13.4	13.9	63.5	10.0
2002	7.2	57.8	42.7	19.7	12.6	13.5	64.1	10.0
2003	13.8	NI	NI	NI	NI	N	NI	INI
2004	13.7	46.3	46.4	16.9	11.4	19.2	65.1	10.0
2005	12.6	NI	NI	NI	NI	NI	NI	NI
2006	5.7	41.3	52.8	14.3	12.2	18.4	70.0	9.8
2007	16.8	40.5	51.9	9.9	15.5	21.2	66.0	9.9

Source: Bank of Jamaica, Statistical Digest, Jamaica Survey of Living Conditions, Economic and Social Survey of Jamaica, various issues  
Note: Inflation is measured point-to-point at the end of each year (December to December), based on Consumer Price Index (CPI)  
NI – No Information Available

**Table 3:** Hospital Health Care Facility Utilization (Using Jamaica Survey of Living Conditions Data) By Income Quintile (in per cent), 1991-

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2004	2006	2007
<b>Public</b>															
<b>Quintile</b>															
1=Poorest	57.8	48.8	57.5	54.1	49.4	54.8	44.5	59.1	61.0	55.7	67.6	73.4	70.9	71.0	75.0
2	43.3	41.8	36.9	34.9	25.3	42.7	39.9	49.0	46.3	44.3	53.5	57.5	53.6	51.1	66.5
3	29.0	28.8	29.3	17.0	22.7	32.8	37.3	40.7	37.5	41.3	32.1	58.6	57.3	50.6	22.1
4	35.8	27.1	20.6	25.6	21.7	29.5	26.3	35.1	37.7	44.6	35.3	46.5	36.7	27.5	27.0
5=Wealthiest	20.6	12.3	16.5	15.7	16.8	11.9	12.4	17.2	15.4	12.8	24.4	30.9	27.6	21.7	21.4
<b>Private</b>															
<b>Quintile</b>															
1=Poorest	34.4	46.3	32.3	41.2	47.1	40.4	49.1	35.5	34.7	38.7	29.3	22.8	26.8	24.3	22.0
2	52.9	48.4	58.7	57.0	66.3	54.1	51.1	45.0	50.3	53.8	38.7	37.5	35.7	42.3	33.3
3	64.5	65.9	62.2	77.0	69.7	62.5	51.8	56.6	59.8	48.8	62.9	37.4	35.7	42.9	64.2
4	53.1	65.4	74.2	72.2	68.0	63.8	62.5	58.3	57.1	48.8	59.1	46.3	55.6	65.4	69.6
5=Wealthiest	73.8	78.1	82.5	81.5	80.0	84.6	80.0	78.4	75.4	78.4	66.5	52.5	65.1	73.9	78.6

Source: Jamaica Survey of Living Conditions, various issues (a joint publication of the Planning Institute of Jamaica and the Statistical Institute of Jamaica)

**Table 4:** Demographic Characteristic of Sampled Population (in N and per cent), N=1,936

	N	Percent
<b>Sex</b>		
Male	762	39.4
Female	1174	60.6
<b>Income Quintile Categorization</b>		
Two Poorest Quintiles	696	36.0
Middle Quintile	376	19.4
Two Wealthiest Quintiles	864	44.6
<b>Marital Status</b>		
Married	532	35.5
Never married	671	44.8
Divorced	20	1.3
Separated	25	1.7
Widowed	250	16.7
<b>Visitors to hospital health care facilities</b>		
Private hospital	915	47.3
Public hospital	1021	52.7
<b>Private Health Insurance Coverage</b>		
No	1086	56.1
Yes	850	43.9
<b>Area of residence</b>		
Rural areas	1289	66.6
Other Towns	424	21.9
Kingston Metropolitan area	223	11.5
<b>Educational Level</b>		
Primary and below	563	39.4
Secondary or post-secondary	813	56.9
Tertiary	53	3.7
Age (Mean ± SD)		43.99 ± 27.458
Crowding (Mean ± SD)		1.7431 ± 1.26568
Negative Affective Psychological condition (Mean ± SD)		4.9182 ± 3.272
Positive affective Psychological condition (Mean ± SD)		3.15 ± 2.436

**Table 5:** Public Hospital Health Care Facility Utilization by Area of Residence (in percentage), N=1,936

Hospital Utilization	Area of Residence			
	Rural Areas	Other Towns	KMA	Total
Private	46.9	48.6	47.1	47.3
Public	53.1	51.4	52.9	52.7
Total	1289	424	223	1936

$\chi^2(2) = 0.385$ ,  $p\text{-value} = 0.825 > 0.05$

**Table 6:** Public Hospital Health Care Facility Utilization By Per Capita Population Income Quintile (in per cent), N=1,936

Hospital Utilization	Per Capita Population Quintile					Total
	Poorest	2.00	3.00	4.00	Wealthiest	
Private	26.2	41.6	41.2	51.7	68.8	47.3
Public	73.8	58.4	58.8	48.3	31.3	52.7
Total	340	356	376	416	448	1936

$\chi^2(4) = 157.024$ ,  $p\text{-value} < 0.001$

**Table 7.1:** Descriptive Statistics of Negative Affective Psychological Conditions and Per capita Income Quintile

Income Quintile	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00=Poorest	338	5.7840	2.89747	.15760	5.4740	6.0940
2.00	355	5.6507	3.17061	.16828	5.3198	5.9817
3.00	375	5.1627	3.28954	.16987	4.8286	5.4967
4.00	415	4.6940	3.07402	.15090	4.3974	4.9906
5.00=Wealthiest	448	3.6875	3.39306	.16031	3.3725	4.0025
Total	1931	4.9182	3.27172	.07445	4.7722	5.0642

F statistic [4, 1926] =28.793, p-value< 0.001

**Table 7.2:** Multiple Comparison of Negative Affective Psychological Condition by Per Capita Income Quintile (Tukey HSD)

(I) Per Capita Population Quintile	(J) Per Capita Population Quintile	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval				
					Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
1.00=Poorest	2.00	.13332	.24177	.982	-.5268	.7934			
	3.00	.62136	.23861	.070	-.0301	1.2728			
	4.00	1.09005(*)	.23309	.000	.4536	1.7265			
2.00	5.00	2.09652(*)	.22921	.000	1.4707	2.7223			
	1.00	-.13332	.24177	.982	-.7934	.5268			
	3.00	.48804	.23558	.233	-.1552	1.1313			
3.00	4.00	.95673(*)	.23000	.000	.3288	1.5847			
	5.00	1.96320(*)	.22606	.000	1.3460	2.5804			
	1.00	-.62136	.23861	.070	-1.2728	.0301			
4.00	2.00	-.48804	.23558	.233	-1.1313	.1552			
	3.00	-.46869	.22667	.235	-1.1502	1.0876			
	5.00	1.47517(*)	.22267	.000	.8672	2.0831			
5.00=Wealthiest	1.00	-1.09005(*)	.23309	.000	-1.7265	-.4536			
	2.00	-.95673(*)	.23000	.000	-1.5847	-.3288			
	3.00	-.46869	.22667	.235	-1.0876	.1502			
4.00	5.00	1.00648(*)	.21675	.000	.4147	1.5983			
	1.00	-2.09652(*)	.22921	.000	-2.7223	-1.4707			
	2.00	-1.96320(*)	.22606	.000	-2.5804	-1.3460			
3.00	4.00	-1.47517(*)	.22267	.000	-2.0831	-.8672			
	5.00	-1.00648(*)	.21675	.000	-1.5983	-.4147			

The mean difference is significant at the .05 level.

**Table 8.1:** Descriptive Statistics of Total Positive Affective Psychological Conditions and Per Capita Income Quintile

Per Capita Income Quintile	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00=Poorest	243	2.4156	2.66056	.17068	2.0794	2.7518
2.00	273	2.8059	2.50786	.15178	2.5070	3.1047
3.00	278	3.2230	2.29752	.13780	2.9518	3.4943
4.00	313	3.2843	2.39504	.13538	3.0180	3.5507
5.00=Wealthiest	386	3.6943	2.21795	.11289	3.4723	3.9163
Total	1493	3.1500	2.43610	.06305	3.0264	3.2737

F statistic [4, 1492] =12.366, p-value< 0.001

**Table 8.2:** Multiple Comparisons of Positive Affective Conditions by Per Capita Income Quintile Tukey HSD

(I) Per Capita Population Quintile	(J) Per Capita Population Quintile	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval				
					Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
1.00=Poorest	2.00	-.39022	.21165	.349	-.9683	.1878			
	3.00	-.80738(*)	.21075	.001	-1.3830	-.2318			
	4.00	-.86871(*)	.20518	.000	-1.4291	-.3083			
2.00	5.00	-1.27866(*)	.19652	.000	-1.8154	-.7419			
	1.00	.39022	.21165	.349	-.1878	.9683			
	3.00	-.41716	.20448	.247	-.9756	.1413			
3.00	4.00	-.47848	.19873	.114	-1.0213	.0643			
	5.00	-.88844(*)	.18978	.000	-1.4067	-.3701			
	1.00	.80738(*)	.21075	.001	.2318	1.3830			
4.00	2.00	.41716	.20448	.247	-.1413	.9756			
	3.00	-.06132	.19778	.998	-.6015	.4788			
	5.00	-.47128	.18878	.092	-.9868	.0443			
5.00=Wealthiest	1.00	.86871(*)	.20518	.000	.3083	1.4291			
	2.00	.47848	.19873	.114	-.0643	1.0213			
	3.00	.06132	.19778	.998	-.4788	.6015			
4.00	5.00	-.40996	.18254	.164	-.9085	.0886			
	1.00	1.27866(*)	.19652	.000	.7419	1.8154			
	2.00	.88844(*)	.18978	.000	.3701	1.4067			
3.00	4.00	.47128	.18878	.092	-.0443	.9868			
	5.00	-.40996	.18254	.164	-.9086	.0885			

The mean difference is significant at the .05 level.

**Table 9: Public Hospital Facility Visits (using the JSLC and Ministry of Health Jamaica) By 1997 and 2004**

Year	Public Facilities in Jamaica	
	Actual Visits, MOH <sup>1</sup>	Self-reported Visits, JSLC
	%	%
1997	33.1	32.1
2004	52.9*	46.8

Source: Ministry of Health Jamaica and the Jamaica Survey of Living Conditions (JSLC)

$\chi^2(4) = 0.083$ ,  $p$ -value > 0.05

<sup>1</sup>The Percentages of Actual visits were computed by Paul Andrew Bourne

\*Preliminary data were used to calculate this percentage

**Table 10: Logistic Regression: Predictors of Public Hospital Health Care facility utilization in Jamaica, N=1,049**

Explanatory variables	$\beta$ coefficient	Std. Error	Wald Statistic	$p$ -value	OR	95.0% C.I.	
						Lower	Upper
Retirement Income	-0.613	0.397	2.376	0.123	0.542	0.249	1.181
Household Head	-0.367	0.728	0.255	0.614	0.693	0.166	2.886
Cost Health Care	0.000	0.000	13.959	0.000	1.000	1.000	1.000
Health Insurance	-2.007	0.212	89.352	0.000	0.134	0.089	0.204
Other Towns	0.183	0.196	0.875	0.350	1.201	0.818	1.765
KMA	0.033	0.357	0.008	0.927	1.033	0.514	2.079
Rural area*					1.00		
Social supp	0.555	0.151	13.419	0.000	1.741	1.294	2.343
Crowding	0.119	0.109	1.194	0.275	1.126	0.910	1.394
Crime Index	0.021	0.013	2.672	0.102	1.021	0.996	1.048
Landownership	-0.226	0.173	1.699	0.192	0.798	0.568	1.120
Environment	-0.283	0.208	1.855	0.173	0.754	0.502	1.132
Gender	0.010	0.167	0.004	0.951	1.010	0.728	1.402
Negative Affective	0.070	0.026	7.084	0.008	1.072	1.019	1.129
Positive Affective	-0.071	0.033	4.738	0.029	0.931	0.874	0.993
Number of males in house	0.083	0.089	0.869	0.351	1.086	0.913	1.293
Number of females in house	0.128	0.095	1.834	0.176	1.137	0.944	1.369
Number of children in house	0.011	0.078	0.020	0.889	1.011	0.868	1.178
Assets owned	-0.043	0.035	1.504	0.220	0.958	0.894	1.026
Age	-0.004	0.004	0.728	0.393	0.996	0.988	1.005
Total Expenditure	0.000	0.000	4.458	0.035	1.000	1.000	1.000
Health Seeking Behaviour	-0.706	0.083	72.077	0.000	0.494	0.419	0.581
Constant	3.654	0.896	16.640	0.000	38.616		

Model Chi-square (df=21) = 326.58,  $p$ -value < 0.001

-2Log likelihood = 1130.37

Nagelkerke R-square=0.356

Overall correct classification = 73.0% (767)

Correct classification of cases of public utilization = 74.3% (N=393)

Correct classification of cases of not public utilization (private) = 71.6% (N=374)

Hosmer and Lemeshow Test of goodness of fit,  $\chi^2(8)=5.395$ , 0.715

\*Reference group

On the other hand, people who have access to private health insurance coverage (Wald statistic=89.35; OR=0.134: 0.089, 0.204), visited a health practitioners for non-ill checks (Wald statistic=72.07; OR=0.494: 0.419, 0.581), and a positive affective psychological conditions (Wald statistic=4.74; OR=0.931: 0.874, 0.993) are more likely not to attend public hospital health care facilities. These issues are all preventative and optimistic measures which are directly related with switching away from public to private hospital health care facilities. Embedded in these findings (based on Table 5.2) is the fact that optimistic in the study are those in the middle to the upper class. This study has shown that there is no distinction between the positive affective psychological conditions of those patients who are classified in the middle to the wealthiest class, but there is a difference between the aforementioned group and those in the poor classes (ie. quintiles 1 to 2 – poorest to poor classes).

Therefore, in addressing the issue of using self-reported health (subjective health or wellbeing) to evaluate health (or wellbeing), it is imperative to note that there is an old cosmology that forwards that subjective assessment of health (self-reported health) is not a good measurement to apply to health or wellbeing. In this section of the study that discourse will not be examined as it will be done in the discussion; however, we must briefly compare and contrast self-reported visits to public facilities data collected by the Planning Institute of Jamaica and the Statistical Institute of Jamaica (in Jamaica Survey of Living Conditions, JSLC) and actual data collected by the Ministry of Health Jamaica for the period of 1996 and 2004.

Using actual visits to public facilities (in Ministry of Health, Jamaica Annual Report) and that of self-reported visits to the same institutions, the data revealed that generally the statistics as collected by the Planning Institute of Jamaica and the Statistical Institute of Jamaica (in Jamaica Survey of Living Conditions, JSLC) reveals health status and conditions of Jamaicans. Based on Table 9, in 1997, the actual visits to public facilities were 33.1% as reported by the Ministry of Health and the self-reported figure for the same period was 32.1% (in JSLC). The difference between the actual and the subjective visits was 1%, which has no statistical difference. Some eight years post 1997 (2004), another comparison was made to assess whether the self-reported data is still good to use to proxy not only perception but reality of hospital health care facility utilization in Jamaica. The figures were 52.9% for actual visits and 46.8% for subjective visits. This indicates that in 2004 Jamaica marginally report lower visits to facilities (6.1%) than the data published by the Ministry of Health. Despite the under reporting of health visits to public facilities in 2004 in Jamaica, there is no statistical difference between the year and the figures by the aforementioned institutions –  $\chi^2(4) = 157.024$ ,  $p$ -value  $< 0.05$

#### **Conclusion:**

Health seeking behaviour (ownership of private health insurance coverage and visited a health practitioners for non-ill checks) is the most important factor that determines visits to public health facilities or private health facilities for care for illnesses (or injuries). Following the value of health seeking behaviour is the cost of medical care; reinforcing the reality for financial inability among people is it lower class, middle class or upper class will see a switching from private to public facilities for ill-treatment. In continuing this discourse, social support is directly related to visits to public hospital health care facilities and so offers some explaining for the large number of people visiting the said institutions to support the patients who visit for treatment of negative health conditions. Again the positive association that exists between expenditure and visits to public facilities further reinforces the point that the more people spent which is the less income they have for saving and further speaks about the poor, they will be less likely to visit private hospital health care facilities. The poor who are less hopeful about the future (unlike those in the middle class) are more optimistic because of financial stability and are ergo able to access private hospital health care because of expenditure of private health care does intimate better health care, which they are willing to pay for.

#### **Discussion:**

In view of life expectancy for both genders in Jamaica (71.3 for males and 77.1 for females) (5), this study indicates that health status of the populace are high as life expectancy means living or denying the odds of disease causing pathogens. In order for a populace to defy the odds of morality or to delay it, the following life expectancy precursors must be considered; namely: healthy lifestyle behaviour or levels of health seeking behaviour, and hospital health care facility must meet universal health standard. The foregoing suggests that health seeking behavior and hospital health care facility utilization, plays a crucial role in embracing such reality. In 2007, Jamaicans sought less medical care for ill-health by 4% over 2006 (70%) They reported more health conditions over the same period (15.5% in 2007 and 12.2% in 2006). Although this is suggesting that they are using more home (or herbal) remedy, It leaves concern about health care facilities utilization and factors that may be Influential.

Data on health care facilities utilization in Jamaica have been reported on and so this paper is seminal. Over the last 2 decades (ending 2007), Jamaicans preference for private hospital health care facility utilization has been lower, narrowing towards public facility utilization. Within the global economic climate which is accounting for the lowered remittances (3), people must spend more for increased consumption goods while at the same time, maintaining good health. The World Health Organization (WHO), in recognizing the role of income on health, postulated that the unfinished agenda for health, poverty remains the main item (6), thus suggesting that poverty means increased hunger, malnutrition and by extension ill-health. This study evidences that there is a correlation between public-private hospital health care facility utilization and per capita income quintiles which is inkeeping with the literature (6-17). The data showed that 74% of those in the poorest quintile used public facilities compared to 31.3% of those in the wealthiest quintile. Embedded in the hospital health care facility utilizations are socio-demographic characteristic (social standing) of demanders. Some 2.8 ( $\approx 3$ ) more people of the poorest quintile attended public facilities than private facilities, and that 2.4 more of the poorest than the wealthiest people attended the former than the latter facilities.

The typological of hospital health care facility utilization in the nation is a reflection of inability (ability) and than inflation (increase prices) will substantially lower the poorest demand for medical care. It is well established in the literature that income affects health, and lower income direct correlates with poor health (7),

which was reinforced in a study conducted by Powell, Bourne and Waller (8) who found that the those in the lower subjective social class reported the least health status. Those in the poorest income quintile are more concerned and able to primarily have difficulty purchasing the necessary nutrients from the required foods groups, and this accounts for their high consumption of public facilities, owing to low cost medical services.

This study found that the cost of medical care strongly correlated with public hospital health care facility utilization, and further explains this potency as it was revealed that the more people spending, the more they will attend public facility. An individual who spends more has less income to save as well as use for medical expenditure that account for increased utilization of private facility with movement along the rung of per capita income quintile.

With less income coupled with more spent on consumption items, health seeking medical behaviour becomes less. Within this reality, the negative correlation between health seeking behaviour and public hospital health care facility utilizations expected as public facility demand is strongly correlated with income or affordability of health care. Private facility consumption depends on one's ability to pay the cost for the care, and it is this which bars the poorest from highly accessing this facilities. This study has revealed that public hospital health care facility utilizations substantially demanded by the poorest and those who are experiencing negative affective conditions and positive affective psychological conditions.

Studies have shown that one psychological state affects his/her health (18-21). This was further refined into negative and positive affective conditions (18, 21,22). Being positive directly correlated to health as people who entertain positive affective conditions are more likely to view like a more optimistic manner and this enhance their health status. In seeking to unearth 'why some people are happier' Lyubomirsky (21) approached this study from the perspective of positive psychology. She noted that, to comprehend disparity in self-reported happiness between individuals, "one must understand the cognitive and motivational process that serves to maintain, and even enhance happiness and transient mood" (21). Using positive psychology, Lyubomirsky identified comfortable income, robust health, supportive marriage, and lack of tragedy or trauma in the lives of people as factors that distinguish happy from unhappy people, which was discovered in an earlier study by Diener, Suh, Lucas and Smith (23). In an even earlier study by Diener, Horwitz and Emmon (24), they were able to add value to the discourse of income and subjective well-being. They found that the affluent (those earning in excess of US 10-million, annually) self-reported well-being (personal happiness of the wealthy affluent) was marginally more than that of the lowly wealthy.

Studies revealed that positive moods and emotions are associated with well-being (20) as the individual is able to think, feel and act in ways that foster resource building and involvement with particular goal materialization (21). This situation is later internalized, causing the individual to be self-confident from which follows a series of positive attitudes that guide further actions (25). Positive mood is not limited to active responses by individual, but a study showed that "counting one's blessings," "committing acts of kindness", recognizing and using signature strengths, "remembering oneself at one's best", and "working on personal goals" all positively influence well-being (25, 26). Happiness is not a mood that does not change with time or situation; hence, happy people can experience negative moods (27,28).

This takes the study to the next area, psychological conditions and per capital income quintile. Those with negative psychological conditions are from the lower class (poor), and studies have shown that there is a correlation between health and psychological conditions. Now, additional issues have emerged from this study as poor are negative and attend public facility more than those at the greater per capita income quintile. On the other hand, those who are more likely to report positive affective psychological conditions are greater for those at the highest level of the income quintile, the findings also show that those who attend private facility are experience greater positive conditions. It follows that public facilities in Jamaica service and service quality are more in keeping with particular psychological state and subjective social class. Hence, private facilities are not only more expensive but the service that it affects is in keeping with the high social standings of its clients, and the reverse is equally the case for public facilities staffers and their clients.

In summary, the demands for public hospital health care facility utilization in Jamaica are primarily based on in affordability and low perceived quality of patient care. The issue of low quality of patient care speaks to not medical care, but to the customer service care offered to client. The greater percentage of Jamaicans who access private health care is not owing to plethora of services, higher specialized doctors, more advanced medical equipment, or low, but this is due to social environment – customer service and social interaction between staffers and clients- and physical milieu – more than one person per bed sometimes, uncleanliness of the facilities. These issues accommodate for the lowly particular persons visiting public and private facilities for medical care.

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