Original Article

Paradoxes in self-evaluated health data in a developing country

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Abstract

Background: Statistics showed that males reported fewer illnesses and greater mortality rates than females, but are outlived by approximately 6 years by their female counterparts, yet their self-rated health status is the same as that of females. **Aims**: This study examines the following questions: (1) Are there paradoxes in health disparity between the sexes in Jamaica? and (2) is there an explanation for the disparity outside of education, marital status, and area of residence? **Methods and Materials**: The current study utilised a data set collected jointly by the Planning Institute of Jamaica and the Statistical Institute of Jamaica. The data set is a survey on the living conditions of Jamaicans. It was conducted between May and August of 2007. The JSLC is a modification of the World Bank's Living Standards Measurement Study. The sample size was 6,783 respondents, with a non-response rate being 26.2%. **Results**: Good health status was correlated with self-reported illness (OR =0.23, 95% CI = 0.09-0.59), medical care-seeking behaviour (OR = 0.51, 95% CI = 0.36-0.72), age (OR = 0.96, 95% CI = 0.96-0.97), and income (OR = 1.00, 95% CI = 1.00-1.00). Self-reported illness is statistically correlated with sex (OR = 0.25, 95% CI = 0.10-0.62), head of household (OR = 0.33, 95% CI = 0.12-0.96), age (OR = 1.04, 95% CI = 1.01-1.07) and current good self-rated health status (OR = 0.32, 95% CI = 0.12-0.84). **Conclusion**: This paper highlights that caution must be used by researchers in interpreting self-reported health data of males.

Keywords: Self-rated health, self-reported illness, health, illness, paradoxes, health disparity, Jamaica

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Introduction

Jamaica began collecting data on the living standard of its people in 1988, and to date, statistics have shown that females continue to report more illnesses than males, seek medical care more frequently than males [1], and outlive males on average by 6 years [2]. A study by Hutchinson et al. [3] on the wellbeing and life satisfaction of Jamaicans showed that women had lower psychological wellbeing and less life satisfaction than men, which highlights some of the paradoxes in the health data. In his study, Bourne [4] found that there was no significant statistical difference between the current good health status of males and females. However, he found that there was no statistical correlation between medical care-seeking behaviour and sex of respondents, suggesting that reporting more illnesses does not mean that females are any more willing

to address their identified health conditions than males.

A research on rural Jamaican women in the reproductive ages of 15 to 49 [5] showed that 79% were never married, 20% were married, 90% had a secondary level education, 45% were poor (i.e., 22% below the poverty line), and 15.3% reported an illness while only 5% had health insurance coverage. In Jamaica, poverty is a rural phenomenon (i.e., in 2007, 15.3% of rural individuals were living below the poverty line compared to 4% of semi-urban Jamaicans and 6.2% of urban peoples). Males' per capita consumption was 1.2 times more than that of females; female-headed households had a higher prevalence of poverty compared to male-headed households [1], and it follows that socio-demographic and economic challenges faced by females do not discount

from them living longer than men. A study by Bourne [6] showed that elderly men in Jamaica are healthier than their female counterparts, suggesting that longer life does not imply healthy life expectancy. Statistics showed that females are more likely to be unemployed [7], poorer, have longer lives, report more illnesses, visit health care practitioners more frequently than men, and are less healthy than men in later life. They are also on average more educated, yet still their health status is generally equal to that of males [8]. Examining mortality data of the sexes for aged Jamaicans, Bourne et al. [9] found that mortality at older ages was between 115 and 120 for males to every 100 females. A study by Abel et al. [10] found that the suicide rate for males was 9 times greater than for females which indicates that mortality for males is not only greater at older ages but that suicide is occurring voluntarily throughout their life span.

Using secondary data of 8,373 Jamaican children (aged under 15 years) for 2002 and 2104 for 2007, Bourne [11] found that there was no significant difference between the sexes' health conditions. However, female children are taken to health care practitioners more frequently than male children. In a study of 5229 and 1394 adolescents aged 10 to 19 years in Jamaica, Bourne [12] found that mortality for males was greater than for females. A significant statistical correlation existed between health conditions, but none between health conditions and age cohort of the sample. Furthermore, he found that in 2007, 96% of adolescents did not report an illness in the past 4 weeks, 54% sought medical care, and 15% had health insurance coverage. One of the drawbacks of Bourne's work [12] was the fact that health condition was not disaggregated by sexes, but invaluable information was provided that showed the low willingness of adolescents to seek medical care. Another study on children showed that while there is no significant difference between the health statuses of the sexes, females are taught by society to seek more medical care than male children [11] and that this continues over their life course [1].

The literature highlights the fact that the health status disparity does not commence in childhood, which denotes that females' longer life and males' greater health status in later life is a paradox that must be unravelled by researchers. Interestingly, while the literature explains Hutchinson et al's work as to why women have lower psychological wellbeing and life satisfaction, it does not provide an understanding for the plethora of other studies which showed no significant statistical difference between the general self-rated health of the sexes [4, 8] and childhood [11]. Additionally, the health status of elderly males is better than that of females despite the fact that females report more illness and live longer than males. Another area which is unexplained by their study is the fact that statistics showed that mortality at all ages for males is higher than for females [2]. There is a lack of information on the paradox of health disparity between the sexes in Jamaica and this research seeks to fill this gap in the literature. The current research attempts to answer the following questions: (1) Are there paradoxes in the health disparity between the sexes in Jamaica? and (2) is there an explanation for the disparity outside of education, marital status, and area of residence?

Materials and Methods
Data
The current study utilised a data set collected jointly by the Planning Institute of Jamaica and the Statistical Institute of Jamaica [13]. The survey was conducted between May and August of 2007. The Jamaica Survey of Living Conditions (JSLC), which began in 1988, is a modification of the World Bank's Living Standards Measurement [1, 14]. The sample size was 6,783 respondents, with a non-response rate of 26.2%.

The JSLC is a cross-sectional survey which used stratified random sampling techniques to draw the sample. It is a national probability survey, and data was collected across the 14 parishes of the island. The design for the JSLC 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 a minimum of 100 residences 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 dwellings was compiled. This, in turn, provided the sampling frame for the labour force. The sample was weighted to reflect the population of the nation.

Instrument
An administered instrument in the form of a questionnaire was used to collect the data from respondents. The questionnaire covers socio-demographic variables such as education, age, consumption, as well as other variables like social security, self-rated health status, self-reported health conditions, medical care, inventory of durable goods, living arrangements, immunisation of children 0–59 months and other issues. Many survey teams were sent to each parish according to the sample size. The teams consisted of trained supervisors and field workers from the Statistical Institute of Jamaica.

Statistical analyses
The Statistical Packages for the Social Sciences - SPSS - PC for Windows version 16.0 (SPSS Inc; Chicago, IL, USA) – was used to store, retrieve and analyze the data. Descriptive statistics such as median, mean, percentages and standard deviation were used to provide background information on the sample. Cross tabulations were used to examine non-metric dependent and independent variables. Analysis of variance was used to evaluate a metric and a non-dichotomous variable. Ordinal logistic regression was used to determine socio-demographic, economic and biological correlates of health status of Jamaicans, and identify whether the educated have a greater self-rated health status than uneducated respondents. A p-value <

0.05 (two-tailed) was selected to indicate statistical significance.

There was no selection criterion used for the current study. On the other hand, for the model, the selection criteria were based on 1) the literature; 2) low correlations, and 3) non-response rate. The correlation matrix was examined in order to ascertain if autocorrelation and/or multicollinearity existed between variables. Based on Cohen & Holliday [15] and Cohen & Cohen [16], low (weak) correlation ranges from 0.0 to 0.39, moderate – 0.4-0.69, and strong – 0.7-1.0. Any correlation that had at least a moderate value was excluded from the model in order to reduce multicollinearity and/or autocorrelation between or among the independent variables [17-21].

Models
Health is a multifactorial construct. This indicates that it is best explained with many variables against a single factor. Health is empirically established and is determined by many factors [22-37], and therefore the use of multivariate regression technique is best suited to explain this phenomenon than bivariate analyses [22-37]. The current study seeks to establish the socio-demographic, economic and biological correlates of self-rated health, and self-reported illness so as to examine the paradoxes in health disparity between the sexes. The aforementioned construct will be tested in two econometric models. Model [1] is good self-rated health statuses and is associated with socio-demographic, economic and biological variables; and Model [2] is self-reported illness and is related to socio-demographic, economic and self-rated health status.

$H_t = f (A_i, G_i, HH_i, AR_i, I_t, J_i, lnC, lnD_i, ED_i, MR_i, S_i, HI_i, lnY, CR_i, MC_t, SA_i, T_i, \varepsilon_i)$ (1)

where H_t (i.e., self-rated current health status in 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 illness of individual i, I_t; injuries received in the last 4 weeks by individual i, J_i; logged consumption per person per household member, lnC; logged duration of time that individual i was unable to carry out normal activities, lnD_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, lnY; crowding of individual i, CR_i; medical expenditure of individual i in time period t, MC_t; social assistance of individual i, SA_i; length of time living in current household by individual i, T_i; and an error term (i.e., residual error).

$I_t = f(A_i, G_i, HH_i, AR_i, J_i, lnC, lnD_i, ED_i, MR_i, S_i, HI_i, lnY, CR_i, MC_t, SA_i, T_i, H_t, \varepsilon_i)$ (2)

where I_t (i.e., self-reported illness in last 4-weeks) 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; injuries received in the last 4 weeks by individual i, J_i; logged consumption per person per household member, lnC; logged duration of time that individual i was unable

to carry out normal activities, lnD_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, lnY; crowding of individual i, CR_i; medical expenditure of individual i in time period t, MC_t; social assistance of individual i, SA_i; length of time living in current household by individual i, T_i; self-rated current good health status, H_t; and an error term (i.e., residual error).

Models [1] and [2] were modified to [3] and [4] owing to collinearity of consumption and income ($r \geq 0.7$) and non-response of injury (over 70%).

$H_t = f (A_i, G_i, HH_i, AR_i, I_t, lnD_i, ED_i, MR_i, S_i, HI_i, lnY, CR_i, MC_t, SA_i, T_i, \varepsilon_i)$ (3)

$I_t, = f (A_i, G_i, HH_i, AR_i, lnD_i, ED_i, MR_i, S_i, HI_i, lnY, CR_i, MC_t, SA_i, T_i, H_t, \varepsilon_i)$ (4)

Measurement of variables
Health in the current study is measured using (1) self-rated health status (self-rated health), and (2) self-reported illness. Self-rated health status was derived from the question, "Generally, how is your health?" with the options being very good, good, fair (or moderate), poor, or very poor. The ordinal nature of this variable was used as was the case in the literature [38-40].

Information on self-reported illness was derived from the question, "Have you had any illnesses other than injury?" The examples given include cold, diarrhoea, asthma attack, hypertension, arthritis, diabetes mellitus or other illness. A further question about illness asked, "(Have you been ill) in the past four weeks?" The options were yes and no. This variable was re-coded as a binary value, where 1 = yes and 0 = otherwise.

Information about self-reported diagnosed recurring illness was derived from the question, "Is this a diagnosed recurring illness?" The options were: (1) yes, cold; (2) yes, diarrhoea; (3) yes, asthma; (4) yes, diabetes mellitus; (5) yes, hypertension; (6) yes, arthritis; (7) yes, other; (8) no.

Information on medical care-seeking behaviour was taken from the question, "Has a health care practitioner, healer, or pharmacist been visited in the last 4 weeks?" The options were yes and no. Medical care-seeking behaviour therefore was coded as a binary measure where 1 = yes and 0 = otherwise.

Total annual expenditure was used to measure income. Income quintile was used to measure social standing. The income quintiles ranged from poorest 20% to wealthiest 20%.

Results
Demographic characteristic of sample
The sample was 6,782 respondents: 48.7% males and 51.3 females. The mean age of the sample was 30.0 years (SD

= 21.8 years). Almost 15% reported having had an illness in the last 4 weeks and 89.1% reported that the illness was diagnosed by a medical practitioner: cold (14.9%), diarrhoea (2.7%), asthma (9.5%), diabetes mellitus (12.3%), hypertension (20.6%), arthritis (5.6%), and unspecified (23.4%).

Bivariate analyses

The findings showed that females were more likely to (1) be widowed (7.3% females to 2.3% males); (2) be older (mean age: 30.6 years females to 29.1 years males) – t = -2.8, P = 0.05; (3) report illness (17.5% females to 12.1% males); and (4) spend on medical expenditure (Table 1). However, there was no significant statistical difference between the sexes (1) seeking medical care, (2) their social standing, and (3) their educational levels.

Table 1 Socio-demographic characteristic of sample by sex of respondents

Characteristic	Sex			
	Male	Female	Total	P
	%	%	%	
Educational level				> 0.05
Primary or below	87.9	86.6	87.3	
Secondary	10.5	11.0	10.8	
Tertiary	1.6	2.4	2.0	
Total	**3207**	**3385**	**6592**	
Social standing				> 0.05
Poorest 20%	20.3	19.3	19.8	
Poor	19.4	20.5	20.0	
Middle	19.3	20.6	19.9	
Wealthy	20.2	19.7	19.9	
Wealthiest 20%	20.9	19.9	20.4	
Total	**3303**	**3479**	**6782**	
Marital status				< 0.05
Married	24.3	22.4	23.3	
Never married	71.1	67.4	69.2	
Divorced	1.6	1.8	1.7	
Separated	0.7	1.0	0.9	
Widowed	2.3	7.3	4.9	
Total	**2150**	**2384**	**4534**	
Area of residence				
Urban	28.5	30.4	29.5	> 0.05
Semi-urban	21.4	21.6	21.4	
Rural	50.1	47.9	49.0	
Total	**3303**	**3479**	**6782**	
Medical care-seeking behaviour				> 0.05
Yes	62.3	67.6	65.6	
No	37.7	32.4	34.5	
Total	**406**	**599**	**1005**	
Self-reported illness				< 0.05
Yes	12.1	17.5	14.9	
No	87.9	82.5	85.1	
Total	**3208**	**3381**	**6589**	
Age Mean (SD) in years	29.1	30.6	29.9	< 0.05
	(21.5)	(21.9)	(21.8)	
Medical Expenditure[1]	9.31	11.19	10.46	> 0.05
Mean (SD) in US$	(15.48)	(36.51)	(30.23)	

[1]Rate in 2007:1US$= JA$80.47

Tertiary level graduates were substantially more likely to be in the wealthiest class (54%), and dwelled in urban areas (63.4%). Concomitantly, they reported more illness

than secondary level respondents (9.2% tertiary to 5.4% secondary), but less than those with primary education level or below (16.2%) (Table 2).

Table 2 Socio-demographic characteristic of sample by educational level

Characteristic	Educational level				
	Primary	Secondary	Tertiary	Total	P
	%	%	%		
Social standing					< 0.05
Poorest 20%	20.3	19.7	3.8	19.9	
Poor	20.0	21.7	7.6	20.0	
Middle	19.4	24.5	16.0	19.9	
Wealthy	19.9	20.3	19.1	19.9	
Wealthiest 20%	20.3	13.7	53.4	20.2	
Total	**5752**	**709**	**131**	**6592**	
Marital status					< 0.05
Married	25.5	0.0	16.9	23.4	
Never married	66.1	99.7	81.5	69.1	
Divorced	1.9	0.0	1.5	1.7	
Separated	1.0	0.3	0.0	0.9	
Widowed	5.5	0.0	0.0	5.0	
Total	**4048**	**344**	**130**	**4522**	
Area of residence					< 0.05
Urban	28.8	30.0	63.4	29.6	
Semi-urban	22.0	19.2	16.4	21.6	
Rural	49.2	50.8	20.6	48.8	
Total	**5752**	**709**	**131**	**6592**	
Medical care-seeking behaviour					>0.05
Yes	65.7	60.0	66.7	65.5	
No	34.3	40.0	33.3	34.5	
Total	**953**	**40**	**12**	**1005**	
Self-reported illness					< 0.05
Yes	16.2	5.4	9.2	14.9	
No	83.8	94.6	90.8	85.1	
Total	**5736**	**705**	**130**	**6571**	
Health insurance coverage					< 0.05
None	79.8	83.7	57.8	79.8	
Private coverage	12.0	11.7	35.9	12.5	
Public coverage	8.2	4.6	6.3	7.7	
Total	**5682**	**689**	**128**	**6499**	
Age Mean (SD) in years	32.0	14.6	26.4	30.0	< 0.05
	(22.6)	(1.7)	(10.6)	(21.8	
Medical Expenditure[1] Mean (SD) in US$	10.44	12.31	5.79	10.46	
	(30.78)	(18.73)	(5.51)	(30.23)	

[1]Rate in 2007:1US$= JA$80.47

Table 3 showed significant statistical associations between (1) marital status and self-reported illness (P < 0.05), (2) area of residence and self-reported illness (P < 0.05), and (3) medical care expenditure and self-reported illness (P < 0.05).

There was a significant statistical association between health care-seeking behaviour (in %) and social standing of respondents – $\chi2$ =17.12, P= 0.002. The findings revealed that as social standing increases from poorest 20% to wealthiest 20%, health care-seeking behaviour (in

%) increases: poorest 20% = 54.7% health care-seeking behaviour; poor = 63.2%; middle class = 66.4%; wealthy = 68.4%, and wealthiest 20% = 73.5%.

Table 3 Socio-demographic characteristic of sample by self-reported illness

	Self-reported illness			P
	Yes	No	Total	
	%	%	%	
Social standing				>0.05
Poorest 20%	19.7	20.0	19.9	
Poor	18.1	20.4	20.0	
Middle	20.9	19.8	19.9	
Wealthy	20.4	19.7	19.8	
Wealthiest 20%	20.9	20.2	20.3	
Total	**980**	**5609**	**6589**	
Marital status				< 0.05
Married	35.9	20.9	23.3	
Never married	46.9	73.4	69.2	
Divorced	3.1	1.4	1.7	
Separated	1.7	0.8	0.9	
Widowed	12.5	3.5	4.9	
Total	**721**	**3801**	**4522**	
Area of residence				< 0.05
Urban	26.6	30.1	29.6	
Semi-urban	18.7	21.9	21.5	
Rural	54.7	47.9	48.9	
Total	**980**	**5609**	**6589**	
Medical care-seeking behaviour				
Yes	65.1	77.4	65.4	
No	34.9	22.6	34.6	
Total	**970**	**31**	**1001**	
Health insurance coverage				< 0.05
None	75.3	80.6	79.8	
Private coverage	11.5	12.7	12.5	
Public coverage	13.3	6.8	7.7	
Total	**978**	**5525**	**6503**	
Age Mean (SD) in years	42.0 (27.7)	28.0 (20.0)		< 0.05
Medical Expenditure[1] Mean (SD) in US$	9.30 (18.27)	38.80 (126.09)		

[1]Rate in 2007: US$1.00 = JA$80.47

Table 4 Stepwise Logistic Regression: Good self-rated health status by socio-demographic, economic and biological variables

Variable	SE	P	Odds ratio	95.0% C.I.	R-squared
Self-reported illness	0.48	0.002	0.23	0.09-0.59	0.02
Medical care-seeking	0.18	0.000	0.51	0.36-0.72	0.02
Age	0.01	0.000	0.97	0.96-0.97	0.15
Income	0.00	0.007	1.00	1.00-1.00	0.01
Constant	0.54	0.000	16.03		

-2 LL = 857.3; Hosmer and Lemeshow Test P = 0.776; X2 = 114.7, P < 0.001; R-squared = 0.20; N=6049 (89.2%).

Multivariate analyses
Good health status of Jamaicans was correlated with self-reported illness (OR = 0.23, 95% CI = 0.09-0.59), medical care-seeking behaviour (OR = 0.51, 95% CI = 0.36-0.72), age of respondents (OR = 0.96, 95% CI =

0.96-0.97), and income (OR = 1.00, 95% CI = 1.00-1.00) (Table 4). The model is a good fit for the data – χ^2 = 114.7, P<0.001, Hosmer and Lemeshow Test P= 0.776. Furthermore, the aforementioned variables accounted for 20% of the variability in the good health status of Jamaicans (R-squared = 0.20) (Table 4).

Table 5 Stepwise Logistic Regression: Self-reported illness by socio-demographic and biological variables

Variable	SE	P	Odds ratio	95.0% C.I.	R-square
Male	0.47	0.003	0.25	0.10-0.63	0.059
Head Household	0.54	0.043	0.33	0.12-0.96	0.024
Age	0.01	0.010	1.04	1.01-1.07	0.021
Good Health	0.49	0.020	0.32	0.12-0.84	0.075

-2 LL = 177.7; Hosmer and Lemeshow Test P = 0.766; χ^2 = 33.7; P<0.001; R-squared = 0.19; N=6049 (89.2%).

Discussion

There are enough empirical studies that agree that there was a positive statistical correlation between income, education, married people, social class and health status of people. The current study concurs with the literature that there is a positive association between income and health status. However, this paper did not find a significant statistical correlation between education, marital status, social class and self-rated health of Jamaicans. The current work highlights a number of disparities between the literature and this paper. Many studies have shown that income is strongly and positively correlated with health status [22, 24]. However, this study disagreed with those findings, as it found that income's contribution was 1% of the explanatory power of 20%. Furthermore, income contributed the least to current good self-rated health status of Jamaicans. Hambleton et al. [23], studying elderly Barbadians, found that self-reported illness accounted for the most variability in health status, which concurs with the current study and therefore emphasises the secondary role that income plays in influencing health status. In Jamaica, medical care-seeking behaviour is not an indicator of preventative care, as those who sought health care were 49% less likely to report good health, and those who did not have an illness spent more on health care compared to those who indicated an ailment. Embedded in this finding is the concept of health that Jamaicans hold regarding how medical care is still synonymous with illnesses, but the fact that those who are not sick spent more on health care and are healthier indicates that preventative care is being practiced by Jamaicans.

Apart from these findings that emerged in the data, a number of health disparities were identified and some could be considered paradoxical events. The study found that men were 75% less likely to report an illness than women. However, there was no significant statistical difference between the health statuses of the sexes. Males

reported greater income than females, yet there was no significance between their health care expenditure and health care-seeking behaviour. Is it a paradox that males reported fewer dysfunctions, attend health care institutions as equally frequently as females, and have a health status that is no better than that of females? The paradox does not cease there, as males are outlived by females, experience greater mortality at all ages than females, and again indicate fewer ailments than females. Is this a paradox?

Comparatively, using statistics from the Ministry of Health in Jamaica (actual visits to public hospitals), and statistics from the Planning Institute of Jamaica and Statistical Institute of Jamaica (i.e., self-reported visits) to measure the validity of self-reported health data in 1997, it was shown that 33.1% of Jamaicans attended public hospitals [38] compared to 32.1% who actually reported having attended public hospitals. Furthermore, in 2004, 52.9% of Jamaicans visited public hospitals [38] compared to 46.8% who reported having visited public hospitals. When the data was disaggregated by sex, in 2004, actual visits for females were 69.8% compared to 65.7% self-reported; while for males, actual visits were 30.2% compared to self-reported visits of 64.2%. Using curative visits from the Ministry of Health data, 33% of males visited health care facilities to address particular illness, yet only 9% of males reported that they had an illness. Embedded in the data are the extent to which males under-report their illnesses, which further emphasises the paradoxes in the health data. Self-rated health data for females is therefore highly accurate, but this is not the case for males. It was a paradox in the health data to find that males reported fewer illnesses, experienced greater mortality at all ages, and had greater income, yet their health status was the same as that of females.

There are clearly paradoxes in the health data between the sexes in Jamaica. If males are under-reporting their illnesses by approximately 50%, statistics on health data are rendered inaccurate, and so caution must be taken in using self-reported health data for males. The reasons for this paradox can be unravelled when one takes a closer look at Jamaican culture and society. Caribbean males, and Jamaicans in particular, are persuaded by society to be strong and brave. Masculinity is tied to these attributes and so justifies the emphasis of physique and strength in the Jamaican culture. The converse explains why they neglect weakness or the appearance of weakness, which includes illnesses. Ill health is conceptualised as weakness and within the context of socialisation and adapting to societal norms, males will not openly speak of illness, they avoid medical care-seeking behaviour and only visit health care institutions when an illness becomes severe.

Statistics from the Ministry of Health showed that since 2000–2004, females outnumber males by 2 to 1 in terms of visits to health care institutions [38]. However, using reported data for the same period, the figures were: in 2000 – 57.4% males and 63.2% females; in 2001 –56.3% males and 68.2% females; in 2001 – 62.1% males and 65.3% females and 2004 – 64.2% males and 65.7% females. Clearly, the self-reported data is not in keeping with the actual data, and this denotes that males are over-stating their health care visits. On the other hand, using 2004's data on actual visits, 69.8% of Jamaican females utilised health care facilities compared to 66% of females who actually reported health care visits. Within the context of over-statement of health care-seeking behaviour and understatement of illness by males in Jamaica, this goes to the crux of the socialisation issue and society's influence on health care.

A Caribbean anthropologist, Chevannes [39], opined that Caribbean males suppressed responses to pain, which justifies a low turnout to health care facilities and higher mortality rates. This is not atypical of Caribbean males. Ali & de Muynck [40], in examining street children in Pakistan, found a similar gender stereotype. A descriptive cross-sectional study carried out during September and October 2000 of 40 school-aged street children (8-14 years) showed that only severe illness that threatens financial opportunities will cause males to seek medical care. Ali & de Muynck's study therefore provides some understanding for the reluctance of males seeking medical care despite having greater income. With 49% of Jamaicans being males, within the context of socialisation and societal pressures and norms, this explains the fact that income has a weak correlation with health status. This negative emotional irresponsiveness to medical care-seeking in Jamaica is not limited to males, as females are a part of the current study which found no significant statistical difference between them and males seeking health care.

Another paradox embedded in the health data is the fact that people who spent more on medical care reported fewer illnesses – males reported fewer ailments, yet they are not healthier than females. Once again the explanation for this is embodied in the socialisation and societal norms, including the negative view that Jamaicans have of health care, health reporting and male unwillingness to separate caring about health from weakness, weakness from femininity, and hence how men respond to the interviewers. There is evidence that males are under-reporting their illnesses in the JSLC's cross-sectional survey, which means that the self-reported health data of males cannot be trusted. The researcher is proposing that a part of the rationale of the under-statement of illnesses by males in Jamaica owes to the sex of the interviewers. Most interviewers employed by the Statistical Institute of Jamaica to collect data from Jamaicans are females, and within the context of not wanting to exhibit weakness, males are understating their illness in order to create the perception that they are strong and healthy. The issue appears to be extensive because statistics from the Ministry of Health for 2004 showed that for curative visits, females outnumber males by 2 to 1 [38]. Although the researcher was unable to obtain the Ministry of Health Annual Report for 2007, the 2006 report showed the same ratios as for 2000–2004, which implies that gender of the interviewers is a contributing factor when collecting data on men's health in Jamaica.

Is it a paradox that the educated are wealthier, have greater income and still are not healthier than the poor with less financial resources? This study would suggest not, as the weak relationship between health status and educational level disappears on the inclusion of income. The current work does show that a bivariate relationship exists between education and healthier people, but that when income and education are placed in a single model, education no longer becomes significantly associated with good health status. The current findings concur with the literature which found that when subjective wellbeing, which is a measure of subjective health, was controlled for income and other variables, the statistical correlation between education and health disappears [41-43].

Smith & Kington [4] wrote, "Good health is an outcome that people desire, and higher income enables them to purchase more of it." This implies that (1) health can be bought and (2) those with lower incomes will have a lower health status. Although the literature has concurred with this study (that income is positively associated with health), income's contribution to health in Jamaica is weak, indicating that while more income is correlated with better health status, Smith & Kington's perspective must be refined, as there was no significant statistical correlation between socio-economic class and health status. In Jamaica, there is no statistical difference between the health statuses of the socio-economic classes and this is equally the case when health is measured using health conditions. On the other hand, there is a clear paradox in the health data of the current study, as income is correlated with better health status, yet the wealthy classes do not have greater health status or fewer reported illness than the lower socio-economic classes.

The rationale that accounts for the paradoxes that emerged from the current study is due to lifestyle practices of the wealthy and the acceptance of the state of the poor. Marmot [44] opined that poverty is associated with greater infant mortality, more ill-health, material and social deprivation, poor conditions, and greater inequality in occupation, employment and income inequality. Within the inequalities that favour the wealthy, income means that they can afford, purchase and buy goods. Wilkinson [45] found a weak relationship between average income and life expectancy in wealthy nations and Sen [46] found that increased life expectancy in Britain between 1901 and 1960 occurred during slow growth of per capita GDP (Gross Domestic Product). Sen went on to say that the improvement in life expectancy was owing to support policies such as sharing of health care and limited food supply. Another found a non-linear increase in the probability of dying with increased income [47], suggesting that income fulfils two roles: (1) provides access to better socio-material resources, and (2) retards the positives of access to become a negative.

The paradox in income can be seen in the fact that while wealthy Jamaicans have more income and access to more socio-material and political resources, their health status is not greater than the under-privileged, poor and poorest

20%. Additionally, the contribution of income to health status is minimal, which is not the case in the literature. It was expected that Jamaicans who sought more health care must have been experiencing more ill-health, but this was not the case. Having established that health data collected from males indicates a low validity, with 49% of the sample being males, it follows that paradoxes identified in the current study highlight the difficulties in interpreting health data in Jamaica.

Conclusion

There are some paradoxes in self-reported health data in Jamaica. Although some of these paradoxes are highlighted in this paper, caution now must be used by researchers in interpreting self-reported health data collected from males, as they are clearly under-reporting illnesses and over-stating their health care-seeking behaviour. In spite of the paradoxes in the data, self-reported health collected on females in Jamaica is of high quality. This denotes that the paradoxes within the health data have provided critical answers to males' reluctance in visiting health care facilities, their unwillingness to openly speak about illnesses and the fact that they have concealed information on their health. Therefore, a new approach is needed in soliciting information from males about their health status.

Acknowledgement

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