Abstract

Background: Since 1988, when Jamaica began collecting data on the living conditions of its people, men have reported seeking less health care than women. Despite this fact, the group has never been studied by researchers. The same is true about the health status of married and non-married men. Objectives: The current study will 1) evaluate the changing epidemiological patterns of diseases affecting men in Jamaica; 2) determine factors that correlate with good health status of men; 3) compare and contrast the differences in health status of men, in particular marital status; and 4) determine which marital status has the greater health status. Materials and Methods: The data for this research were taken from two secondary cross-sectional surveys. A sample of 8,078 respondents 15 years and older was extracted from the 2002 survey (n=25,018 respondents) and 2,224 respondents from the 2007 sample (n=6,783 respondents). SPSS for Windows 16.0 was used to store, retrieve and analyse the data. Chi-square, analysis of variance, t-test and logistic regression were used in this paper. Results: Married men are more likely to report an illness than never married (OR = 1.68, 95% CI = 1.45-1.95), separated, divorced or widowed men (OR = 2.62, 95% CI = 2.06-3.33). No significant statistical difference existed between the self-rated health status of married and unmarried men. Conclusion: This study provides a platform upon which future studies can commence as we begin to examine men’s health in Jamaica.

Keywords: Married, unmarried men, self-rated health, self-reported illness, Jamaica.

Introduction

Studies in the Caribbean, and Jamaica in particular, on male issues have concentrated on marginalisation [1-4], educational underachievement [5, 6], fatherhood [7], masculinity [8], reproductive health and survivability [9-12], and crime and violence [13-16]. In the English-speaking Caribbean, even among the new and emerging themes, studies have avoided men’s health status, men’s health conditions, and issues affecting men’s health except statistics on mortality and morbidity [17]. In a recently published text titled “Health Issues in the Caribbean” [18], the coverage of topics included child health, reproductive health, the elderly, chronic non-communicable diseases, disability, health care-delivery and health issues in the Caribbean, which reinforces the claim of the lack of research on men’s health. Another text entitled “Gender in the 21st Century: Caribbean Perspectives, Visions and Possibilities” [19] had articles on new and emerging themes, redefining masculinities and femininities, but none that examined gender and health in the region, particularly men’s health in the 21st century and the challenges of ill-health of the sexes. Men’s health is therefore in need of research as it remains relatively unexamined in the region.
A comprehensive search of health literature in the English-speaking Caribbean revealed a lack of study regarding men’s health, men’s health care-seeking behaviour, correlates of good health status of men, and the epidemiological shifts in health conditions of men. In Jamaica, statistics for 2007 estimated that 49% of the population was male, yet no study exists on this cohort. This denotes neglect of men’s health although they have had a greater mortality than their female counterparts. Concurrently, since 1988 when the Planning Institute of Jamaica and the Statistical Institute of Jamaica began collecting data on Jamaicans’ Living Conditions, women have been outnumbering men in health care utilisation [20]. Life expectancy for the sexes in Jamaica revealed that women continue to outlive men, and this is as much as 6 years in 2004 [17]. It can be extrapolated from the aforementioned statistics that the lack of health care-seeking behaviour is accounting for 1) premature mortality of men, 2) men spending more time getting care when becoming ill, and 3) men having poorer health status than women.

There is a paradox in the health statistics for the sexes as males in Jamaica report fewer illnesses than females, yet they tend to live 6 fewer years than women. Is it that 1) males are underreporting their illnesses, and 2) there are issues surrounding subjective health data? Self-reported health conditions have been widely used to measure the health of people or a population [20-22]. Using self-reported illness to measure health status in Jamaica, men’s health would be greater than women’s health. Since 1988, females have always reported more health conditions than males. However, they live longer than their male counterparts. Is there a validity issue with self-reported health to assess health? There are some fundamental challenges associated with the utilisation of subjective measures in the evaluation of health and these include 1) subjectivity, 2) response bias, 3) recall bias, and 4) validity.

Studies have revealed that current illness is strongly correlated with health status [23], self-reported illness and life expectancy [24], self-reported health and mortality [24, 25], and self-reported health and functional ability [26], indicating some validity in subjective measures in assessing objective health status. One study found that self-rated health status is a highly reliable measure to proxy health and that this “successfully crosses cultural lines” [27]. Concurrently, O’Donnell & Tait [17] found that self-reported health status can be used to assess health status as they found that all respondents who had chronic diseases reported very poor health.

The fact that people are asked to recall and state their health status opens the issue of subjectivity and biasness. Subjective indexes as a measure of any phenomenon introduce some element of biasness. If people are asked to recall and provide their assessment (i.e., perception) of a matter, this subjectivity denotes not only people’s perceptions, but it also includes their biases. People’s perceptions are highly biased as they can provide an inflated or deflated account of their state in an interview or on a self-administered questionnaire. It is for this reason that empirical researchers have avoided and decried its utilisation in the measurement of health. Even though subjective indexes are in keeping with the WHO’s widened definition of health, their biasness must be understood as challenges.

It cannot be denied that the discourse on subjective wellbeing, using survey data, is based on person’s judgement, and therefore must be prone to systematic and non-systematic biases [29]. Diener [30] argued that the subjective measure seemed to contain substantial amounts of valid variance, suggesting that this indicated the validity of subjective indexes. Kahneman [31] devised a procedure of integrating and reducing the subjective biases when he found that instantaneous subjective evaluations are more reliable than assessments of recall of experiences. This highlights the biasness, therefore, that remains in cross-sectional surveys asking people to remember over a long time. Embedded in the aforementioned findings are whether particular subjective indexes that comprised recall over 2-4 weeks is a good measure for objective indexes of health. Embodied in the literature is the need to carry out empirical research on subjective and objective indexes with emphasis on subjective indexes that are not on instantaneous assessment.

The literature has provided some empiricism to the use of self-reported health conditions or self-reported health in assessing health status of people. Within the context that subjective indexes are good in measuring health status, this approach will be used to examine men’s health in Jamaica. The objectives of the current study are to 1) evaluate the changing epidemiological patterns of diseases affecting men in Jamaica; 2) ascertain factors that correlate with good health status of men; 3) compare and contrast the differences in health status of men, in particular marital status; and 4) determine which marital status group has the greatest health status.

Materials and Methods

Population This study utilised secondary cross-sectional datasets for 2002 and 2007 taken from the Jamaica Survey of Living Conditions (JSLC). The JSLC is a joint publication from the Planning Institute of Jamaica (PIOJ) and the Statistical Institute of Jamaica (STATIN) for analysis [32-34]. The JSLC began in 1988 to collect data on the living conditions of Jamaicans in order to measure government policies. These cross-sectional surveys were conducted between May and October of each year across the 14 parishes of Jamaica. The current study extracted 8,078 respondents who were 15 years and older from the 2002 sample (n=25,018 respondents) and 2,224 from the 2007 sample of 6,783 respondents [35, 36]. The JSLC used stratified random probability sampling technique to draw the original sample of respondents. The non-response rates for 2002 and 2007 lie between 23 and 27% respectively. The JSLC survey uses a complex design with multiple stratifications to ensure that it represents the
The current study will employ multivariate analyses in the study of self-reported health status and self-reported health conditions. The use of this approach is better than bivariate analyses as many variables can be tested simultaneously for their impact (if any) on a dependent variable [21-26; 38-45]. The final model for the current study is shown below:

\[ H_t = f(A_i, G_i, HH_i, AR_i, \lnC, ED_i, MR_i, S_i, \sum MC_t, SRI_i, \varepsilon) \]

Where \( H_i \) (i.e., self-rated health conditions in time \( t \)) is a function of age of respondents \( A_i \); sex of individual \( G_i \); household head of individual \( HH_i \); area of residence, \( AR_i \); logged consumption per person per household member, \( \lnC \); Education level of individual \( ED_i \); marital status of person \( i, MR_i \); social class of person \( i, S_i \); summation of medical expenditure of individual \( i \) in time period \( t, MC_t \); self-reported illness, \( SRI_i \); and an error term (i.e., residual error).

### Table 1: Demographic characteristics of sample, 2002 and 2007

| Characteristic | 2002 | 2007 |
|----------------|------|------|
| **Marital status** |      |      |
| Married         | 2007 | 25.7 | 522 | 24.3 |
| Never married   | 5417 | 69.4 | 1528| 71.1 |
| Divorced        | 64   | 0.8  | 34  | 1.6  |
| Separated       | 85   | 1.1  | 16  | 0.7  |
| Widowed         | 234  | 3.0  | 50  | 2.3  |
| **Health care utilisation** |      |      |
| Public, Hospitals | 41.9 | 35.9 |
| Private, Hospitals | 7.9  | 7.0  |
| Public, Health care centres | 13.4 | 15.8 |
| Private, Health care centres | 44.1 | 49.7 |
| Other           | 2.5  |       | 2.4 |
| **Self-reported illness** |      |      |
| Yes             | 540  | 62.1 | 176 | 63.8 |
| No              | 330  | 37.9 | 100 | 36.2 |
| **Self-reported diagnosed illness** |      |      |
| Cold            | 0    | 0    | 23  | 8.4  |
| Diarrhoea       | 2    | 2.6  | 7   | 2.6  |
| Asthma          | 1    | 1.3  | 19  | 7.0  |
| Diabetes mellitus | 3   | 3.9  | 31  | 11.4 |
| Hypertension    | 39   | 50.6 | 58  | 21.2 |
| Arthritis       | 16   | 20.8 | 24  | 8.8  |
| Other (unspecified) | 16  | 20.8 | 77  | 28.2 |
| Not diagnosed   | 0    | 0    | 34  | 12.5 |
| **Self-reported health status** |      |      |
| Very good       | 794  |      | 36.9|      |
| Good            | 977  |      | 45.4|      |
| Moderate (fair) | 266  |      | 12.4|      |
| Poor            | 92   |      | 4.3 |      |
| Very very poor  | 21   |      | 1.0 |      |
| **Age Median (range)** | 36 yrs | 37 yrs |
| (84yrs)         |      |      |
| **Length of illness** |      |      |
| Median (range)  | 7 d  | 90 d | 7 d |      |
| No. visits to practitioner |      |      |
| Median (range)  | 1 (19)| 1 (12)|

**Measures** Self-reported illness status is a dummy variable, where 1 = reporting a ailment or dysfunction or illness in the last 4 weeks, which was the survey period; 0 if there were no self-reported ailments, injuries or illnesses [21, 22]. While self-reported ill-health is not an ideal indicator of actual health conditions because people may...
underreport, it is still an accurate proxy of ill-health and mortality. Health status is a binary measure where 1 = good to excellent health, 0 = otherwise [24-26, 46], which is determined from “Generally, how do you feel about your health?” Answers for this question are in a Likert scale matter ranging from excellent to poor. Age is a continuous variable beginning at 15 years. Medical care-seeking behaviour was taken from the question “Has a health care practitioner, header, or pharmacist being visited in the last 4 weeks?” Answer options for this were Yes or No. Medical care-seeking behaviour therefore was coded as a binary measure where 1 = Yes and 0 = otherwise.

Results

Demographic characteristics

Table 1 examines social and health variables of samples for 2002 and 2007. For 2002, a sample of 8,078 respondents was extracted and this was 2,224 respondents for 2007. Over 2002, the number of respondents who reported an illness in 2007 increased by 1.4%. In 2007 over 2002, increases were recorded in number of respondents being diagnosed with cold (+8.4%), asthma (+5.7%), diabetes mellitus (+7.5%), and unspecified health conditions (+7.4%). Conversely, reductions were seen in hypertensive (-29.4%) and arthritic cases (-12.0%). Marginally more respondents sought medical care in 2007 over 2002 (+1.7%).

There was a strong significant statistical correlation between self-reported health status and self-reported health conditions – χ² (DF=4) = 531.7, P < 0.001, correlation coefficient = 0.446. The cross-tabulation revealed that respondents who had indicated that they had an illness (dysfunction or health condition) were more likely to report moderate to poor health status. Nine percent of those with health conditions recorded very good health status compared to 41% of those who did not report illness who indicated good health status.

A significant statistical association was found between self-reported illness and marital status of respondents for both years – P <0.001. The findings showed that the widowed recorded the greatest percentage of illness of all the marital statuses. Conversely, those who were never married recorded the lowest illnesses. In 2002, married respondents recorded 2.2 times more illnesses than men who were never married, and this increased to 2.7 times more illnesses in 2007. Concurrently, married respondents recorded more illnesses than divorced respondents. However, this was the reverse in 2007, with the latter group registering 4.3% more illnesses.

A significant statistical correlation existed between medical care-seeking behaviour and marital status of respondents in 2002 – P < 0.5. Conversely, there was no statistical association between the two aforementioned variables for 2007 – P > 0.5 (Table 3). In 2002, married respondents were the second most to visit medical care institution.

Multivariate analyses

Table 4 represents information on social and biological determinants of good health status of the sample. Three determinants accounted for 29.2% of the variability in self-reported health status. The model is a good fit for the data: Hosmer and Lemeshow χ²= 3.88, P = 0.87; 76.8% of the data were correctly classified, with 56.1% of those classified in good self-reported health and 88.5% in poor health status.

| Characteristic | Marital status | P |
|---------------|---------------|---|
| 2002 Illness | | |
| Cold | 0.0 | 0.0 | DNR | 0.0 | 0.0 |
| Diarrhoea | 2.3 | 4.3 | DNR | 0.0 | 0.0 |
| Asthma | 2.3 | 0.0 | DNR | 0.0 | 0.0 |
| Diabetes mellitus | 2.3 | 8.7 | DNR | 0.0 | 0.0 |
| Hypertension | 54.5 | 34.8 | DNR | 100.0 | 66.7 |
| Arthritis | 22.7 | 17.4 | DNR | 0.0 | 22.2 |
| Unspecified | 15.9 | 34.8 | DNR | 0.0 | 11.0 |
| Not diagnosed | 0.0 | 0.0 | DNR | 0.0 | 0.0 |
| Total | 44 | 23 | 1 | 9 |

| 2007 Illness | | <0.001 |
| Cold | 9.0 | 7.1 | 9.1 | 0.0 | 15.8 |
| Diarrhoea | 0.0 | 4.0 | 9.1 | 25.0 | 0.0 |
| Asthma | 4.5 | 10.3 | 9.1 | 0.0 | 0.0 |
| Diabetes mellitus | 15.3 | 7.1 | 27.3 | 0.0 | 10.5 |
| Hypertension | 31.5 | 11.9 | 9.1 | 50.0 | 26.3 |
| Arthritis | 12.6 | 4.8 | 9.1 | 25.0 | 10.5 |
| Unspecified | 18.0 | 38.1 | 27.3 | 0.0 | 26.3 |
| Not diagnosed | 9.9 | 16.7 | 0.0 | 0.0 | 10.5 |
| Total | 111 | 126 | 11 | 4 | 19 |

Table 2 Self-reported diagnosed health conditions by marital status

| Characteristic | Marital status | Mar | N mar | Div | Sep | Wid |
|---------------|---------------|-----|-------|-----|-----|-----|
| 2002 Medical care-seeking behaviour | | | | | | |
| Yes | 66.3 | 56.5 | 57.1 | 69.2 | 64.2 |
| No | 31.7 | 43.5 | 42.9 | 30.8 | 35.8 |
| Total | 331 | 428 | 14 | 13 | 81 |

| 2007 Medical care-seeking behaviour | | >0.05 |
| Yes | 64.9 | 63.1 | 63.6 | 50.0 | 61.1 |
| No | 35.1 | 36.9 | 36.4 | 50.0 | 38.9 |
| Total | 111 | 130 | 11 | 4 | 18 |

Table 3 Self-reported health conditions by marital status

| Variable | S.E. | P | 95.0% C.I. |
|---------|------|---|------------|
| Age | 0.01 | 0.000 | 0.95 | 0.93 | 0.96 | 0.292 |
| Self-reported illness | 0.64 | 0.045 | 0.29 | 0.08 | 1.00 | 0.016 |
| Medical care-seeking behaviour | 0.30 | 0.002 | 0.40 | 0.22 | 0.72 | 0.034 |

Table 4 Stepwise Logistic regression: Correlates of self-reported good health status (n=1952)
Table 5 highlights information on social determinants of self-reported health conditions. Seven social determinants accounted for 7.6% of the variability in self-reported health conditions. The model is a good fit for the data: Hosmer and Lemeshow $\chi^2 = 5.6$, $P = 0.69$: 83.4% of the data were correctly classified, with 99.7% of those classified in health and 76.5% in poor health status.

Table 5 Stepwise Logistic regression: Correlates of self-reported health conditions

| Variables               | S.E. | $P$ | Odds ratio | 95.0% C.I.                  | $R^2$ |
|-------------------------|------|-----|------------|-----------------------------|-------|
|                         |      |     | Lower      | Upper                      |       |
| Two wealthy quintiles   | 0.09 | 0.002 | 1.32      | 1.11                       | 1.56  | 0.002 |
| †Two poor quintiles    | 1.00 |     |            |                            |       |
| Log income              | 0.05 | 0.000 | 0.79      | 0.72                       | 0.87  | 0.005 |
| Sep, div, wid           | 0.12 | 0.000 | 2.62      | 2.06                       | 3.33  | 0.015 |
| Married                 | 0.08 | 0.000 | 1.68      | 1.45                       | 1.95  | 0.008 |
| †N mar                  | 1.00 |     |            |                            |       |
| Other towns             | 0.08 | 0.032 | 1.00      |                            | 0.84  | 0.99  | 0.001 |
| †Rural areas            | 1.00 |     |            |                            |       |
| Secondary               | 0.08 | 0.009 | 0.58      | 0.49                       | 0.67  | 0.030 |
| Tertiary                | 0.17 | 0.018 | 0.66      | 0.47                       | 0.93  | 0.002 |
| †Primary and below      | 1.00 |     |            |                            |       |
| Social support          | 0.07 | 0.000 | 1.37      | 1.20                       | 1.56  | 0.005 |
| Log crowd               | 0.06 | 0.003 | 0.85      | 0.76                       | 0.95  | 0.008 |

Se: separated, div: divorced, wid: widowed, N mar: Never married

Discussion

There are many empirical studies which have established that married people have a better self-reported health status (or self-reported health, subjective wellbeing) and/or a lower mortality than non-married people [47-55]. The current study disagrees with the literature as it revealed that married people have a better self-reported health status. There are many empirical studies which have established as being associated with health [59, 60] and

Education is one of the socio-demographic correlates of health, and this is well established in health literature. There is a paradox which emerged from this study as educational attainment is not significantly associated with good health status; however, it is correlated with health status. The current research found that as men become more educated, they are less likely to report health conditions. Embedded in this finding is the role of education in better lifestyle practices and choices. However, greater educational attainment is not translated into better “good” health status, as typologies of reported dysfunctions are lifestyle causing, suggesting that the while education is aiding in reducing poor health status, it is not translating into better health for men as they still not adhering to healthy lifestyle practices.

Grossman [56], Smith & Kington [57], Marmot [58], and other scholars have found that income is strongly correlated with good health. The current study found that income is not correlated with good health status, but rather with health conditions. Men with more income are 0.21 times less likely to report poor health status. Concurrently, medical care-seeking behaviour is based on 1) one’s ability to afford it, 2) perception of the illness and its effect on life, 3) severity of illness, and 4) other factors [21]. Although income does not directly influence good health status for men, it indirectly affects it through medical care-seeking behaviour. Men who seek medical care are 0.60 times less likely to report health conditions, suggesting that medical care-seeking behaviour is a preventative measure against poor health. Hence, being able to afford it is critical to medical care utilisation. Income affords people the ability to visit medical care facilities, and it should be noted here that Jamaican men are more likely to visit private health care centres. Income, therefore, cannot buy good health as Smith & Kington [57] opined, as the group with the wealthy men in Jamaica were 1.32 times more likely to report more health conditions in reference to those in the two poorest quintiles. Embedded in this finding is erosion of good health by having income beyond a certain amount, as wealthy men in Jamaica are involved in unhealthy lifestyle practices which accounted for their health status being lower than that of poor men. While income is able to afford particular things, including better medical care, the wealthy involvement in unhealthy lifestyle behaviour is reducing the gains of income on health for men.

The literature has shown that area of residence is correlated to health status, and this concurs with that finding. However, area of residence was not significantly associated with good health but rather with health status. Unlike other studies that found urban dwellers had the greatest health status [59, 60], the current research found no significant statistical difference between self-reported health conditions experienced by urban and rural men. On the other hand, men who resided in other town areas were less likely to report illness than rural men.

The number of people living in a household is well established as being associated with health [59, 60] and
this study concurs with that finding. The current work however found that crowding is associated with health conditions but not related to good health status. The more people dwelling in a household denotes that men will be 0.15 times less likely to report ailments, suggesting that family and relatives positively contribute to men’s health. The contribution comes in the form of assistance in seeking medical care, financial assistance to seeking care, advice on seeking care, and provision of care. However, men who have social support are more likely to report illnesses.

Separated, divorced and widowed men are the most likely to record illness than men of other marital status. The current findings also revealed that separated men were more likely to record having had hypertension, diarrhea and arthritis compared to other marital statuses. This suggests that separation increases health conditions in men, and higher rates in the aforementioned chronic illnesses indicates the poor lifestyle choices made by this group of individuals. A study by Ben-Shlomo et al. [61] highlights the unhealthy lifestyle choices of unmarried men, when they found that “heavy alcohol consumption” was greatest among divorced/ separated men and that alcoholic beverages accounted for between 21 to 30% of mortality resulting from respiratory and non-cardiovascular/neo-plastic diseases. Concurrently, current smokers were highest among separated and divorced men, and mortality caused by lung cancer was 1.83 times more for the former than for married men which was the highest among the different marital statuses [61]. Ben-Shlomo et al.’s work provides some explanation for the highest levels of self-reported illness, in particular chronic dysfunctions, affecting separated men in Jamaica, as separation results in a change towards unhealthy lifestyle practices among these men.

It can be extrapolated from the current findings that separation of men from their spouses results in unhealthy practices. The unhealthy choices that are made by these men increase their risk of coronary heart disease, stroke and diabetes mellitus [62] and this reinforces the disease risk for separated, divorced, and widowed men in Jamaica as they become indulgent (or increase indulgence) in unhealthy lifestyle practices. Unhealthy life choices of divorced, widowed or separated men including tobacco use, physical inactivity, alcohol consumption, and unhealthy dietary intake further erode life expectancy of these individuals. These lifestyle practices may begin in early adulthood and with the new marital status begin to be practiced increasingly by some men. Hence, separated and divorced men who remain in these categorisations for a long time are more likely to experience premature death caused by suicide or other issues such as lung cancer, resulting from their increased unhealthy lifestyle choices. They are also more likely to relapse into depression [63] and commit suicide [64]—divorced and separated men are 2.4 times more likely to commit suicide than married men. A recently conducted research by Abel et al. [65] found that the suicide rates among men was 9 times more than among women and while they do not disaggregate this by marital status, a part of this is owing to the choices they make and their inability to live with these choices. An important question that needs to be addressed is whether there are differences in suicide rates among marital statuses in Jamaica, as this will provide some answers to the cost of separation and divorce on men.

Those unhealthy choices are problematic not only for men but their families, including their children and particularly the young children [66-69]. This disruption in the family is correlated with increased suicide, greater risk of illnesses such as asthma, headaches, delinquency [70] and poverty for the children who are now a part of the separation process. Separation and divorce not only affects young children. A study on children 18 to 22 years old whose parents separated or divorced were more likely to have poor relationships with their parents as well as reported psychosocial behaviour problems [71]. Separation and divorce extends to the wider society as the general society will be required to pay the medical costs for care of those who visit public health care facilities as well as the uninsured, including elderly separated and divorced men.

**Conclusion**

In sum, the current study revealed that married men do not have greater health status than unmarried men in Jamaica, and that there are epidemiological shifts in illness from hypertension to unspecified conditions for widowed men and those who were never married. While income correlates with health conditions, it does not directly influence good health status of men. Income has an indirect correlation with good health status through its relationship with illness and medical care-seeking behaviour. Marriage is beneficial for men, and once they become separated, divorced or widowed, the separation from their spouses positively correlates with increased health conditions. This study therefore provides a platform upon which future studies can commence as we begin to examine men’s health in Jamaica, and this will be critical to public health practitioners in effectively carrying out their mandate as well as for future research.

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