Research Article

Self-rated Health Status of Young Female Adolescents in Jamaica

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ABSTRACT

Background: The study of young female adolescents in Jamaica is sparse and few, in particular on reported health status. This research seeks to examine the self-reported health status of young female 12-17 years and to model factors that influence good health status of young female adolescents.

Method: This study utilizes a 2002 Jamaica Survey of Living Conditions (JSLC). The survey is a nationally representative cross-sectional one in which data was collected using stratified random sample, during June - October 2002. It is a modification of the World Bank's Living Standards Measurement Study (LSMS) household survey. The current study used a sub-sample of 1,565 female respondents between the ages of 12 to 17 years, with a mean age of 14.4 years (± 1.7 years).

Results: Four variables emerged as accounting for 20.3% of the variability in reported good health status of young females. The factors are cost of medical care (OR = 1.00, 95% CI = 1.00, 1.00), private health care insurance coverage (OR = 0.30, 95% CI = 0.01, 0.09), number of females in household (OR = 0.73, 95% CI = 0.59, 0.90), and health care seeking behaviour (OR = 1.25, 95% CI = 1.04, 1.52).

Conclusions: The findings are far reaching and can be used to guide policy. Any policy that seeks to address the well-being of female adolescents must incorporate the advancement of the household, social and economic factors coupled with the needs of the individual.

Keywords: Youth, females, adolescents, health-care seeking behavior, health status, Jamaica, insurance

Introduction

Adolescents and young adults represent a large and growing proportion of the populations of developing countries around the world. In the English-speaking Caribbean countries, adolescents represent about 20% of the population, or approximately 1.2 million persons according to 2012 population data (International Database).[1] Adolescence usually refers to the psychological and physiological processes of maturation between the ages of about 12 to 18. Adolescence is a transitional period of rapid physical (pubertal), emotional, cognitive and social development.[2] It is often characterized by the clarification of sexual values, experimentation with sexual behaviours and identity confusion.[3] While adolescents are generally among the healthiest of any age group, they have special biological needs.[4-6]

Worldwide, studies on adolescent sexual behaviour show that the years of adolescence and the transition to adulthood are associated with increases in rates of risky behaviour, including the use of drugs and alcohol, delinquency, and unsafe sexual behaviour. [6-10] Early initiation of sexual activity among adolescents has been identified as a major risk factor for a number of negative reproductive health outcomes, including early child-bearing and associated implications for maternal and child health outcomes, as well as increased risk for sexually transmitted infections (STIs) including human immunodeficiency virus (HIV). [9-13]

The last two decades have been marked by significant changes in adolescent health in Caribbean countries. There has been a shift from infectious to social morbidities caused or contributed to by individual risk behaviors and environmental factors concurrent with rising unemployment, increased poverty, and reduced health services.[14,15] Until the last ten years, we have known relatively little about the health status of youths residing in the Caribbean. In a study of a clinical population of

young people in Jamaica, Smikle et al. found that the mean age at onset of sexual intercourse among males was 12.5 years; 4% of sexually active males reported using condoms consistently.[16] According to the Jamaica Reproductive Health Survey of 2002 - 03, sexual initiation occurs on average at 13.5 years for young men and 15.8 years for young women.[17] The earlier adolescents begin sexual activity; the less likely they are to use contraception, thus increasing their risks of pregnancy and STIs.[18]

Soyibo & Lee reported, among a general population of Jamaican school-attending adolescents, rates of marijuana, cocaine, and heroin use of 10.2%, 2.2%, and 1.13%, respectively; the alcohol use rate was 50.2%, and the tobacco use rate was 16.6%.[19] The country's adolescent fertility rate has increased in recent years and, at 112 per 1,000 women aged 15 - 19, is among the highest in the region. Before they reach the age of 20, 37% of Jamaican women have been pregnant at least once, and 81% of these pregnancies are unplanned from multiple relationships.[17,20] This concur with another study where more than 75 percent of pregnancies among 15-24-year-olds are unplanned, and about 40 percent of Jamaican women have had at least one child before age 20.[21]

Self-rated health is a subjective and general indicator of overall health status. It evaluates the health of an individual based on his/her perception of general overall health. This indicator has been found to capture important information about the individual's overall health and to be powerful predictors of mortality and functional ability.[22] While self-rating of health is a good measure of objective and subjective health, it is also a feasible way to measure health in large-scale surveys.[2,23,24] Self-rated health has been extensively studied in older adult population groups, where a range of factors associated with self-rated health status has been identified.[25,26] Much less is known about the self-rated health status of younger populations for instance adolescents in Caribbean countries such as Jamaica, and the available information remains limited in scope.

However, the published literature suggests that young people preferentially employ psychological or behavioural factors as a rating frame for their health.[27,28] In contrast, for older people, physical well-being plays a more crucial role in assessing their health.[29] Given the observation that young adults differ from older people in their perception of health, a better understanding and a separate analysis of the factors associated with self-rated health status is needed for this younger age group, especially adolescents. Thus, this research seeks to examine the self-reported health status of young female Jamaicans and to determine the factors that influence the health status of young females, ages 12 to 17 years.

Method

Data

The current study is based on data from 2002 Jamaica Survey of Living Conditions (JSLC). The JSLC is an annual nationally representative survey which collects information on health, health conditions, health care utilization, and other socio-demographic characteristics of Jamaicans. It is a modification of the World Bank's Living Standards Measurement Study (LSMS) household survey.[30]

The survey collects information from the non-institutionalized population between June -October 2002. The sample size was 25,018.[31] The current study uses a subsample of 1,565 adolescents (ages 12 through 17 years) from the general JSLC survey for 2002. The mean age of respondents was 14.4 years (±1.7 years). The only inclusion criterion for this study was female and age (12 through 17 years).

Survey

The survey was drawn using stratified random sampling. The design was a two-stage stratified random sampling design where there was a Primary Sampling Unit (PSU) and a selection of dwellings from the primary units.[31] 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 is grouped into strata of equal size based on dwellings (EDs). Based on the PSUs, a listing of all the dwellings was made, and this became the sampling frame from which a Master Sample of dwelling was compiled, which in turn provided the sampling frame for the labour force. One third of the Labour Force Survey (i.e. LFS) was selected for the JSLC. The sample was weighted to reflect the population of the nation. The non-response rate was 26.2%. The non-responses include refusals and rejected cases in data cleaning.[31]

Over 1994 households of individuals nationwide are included in the entire database of all ages. A total of 620 households were interviewed from urban areas, 439 from other towns and 935 from rural areas. This sample represents 6,783 non-institutionalized civilians living in Jamaica at the time of the survey. The JSLC used complex sampling design, and it is also weighted to reflect the population of Jamaica. A detailed description of the sample frame for the JLSC is already discussed and presented in published studies.[31-34]

Statistical Analysis

Data was stored and retrieved in the SPSS 21.0. Descriptive statistics were used to provide pertinent information on the subsample and logistic regression was used to examine the influence of socio-demographic and psycho-economic variables on self-reported health status (or reported health status). The dependent variable was self-reported health status and the independent variables were socio-demographic and psycho-economic variables. Means and frequency distribution were considered significant at $P < 0.05$, chi-square, independent sample t-test, and analysis of variance f test, and linear regressions. Where collinearity existed ($r > 0.7$), variables were entered independently into the model to determine those that should be retained during the final model construction.[35] To derive accurate tests of statistical significance, we used SUDDAN statistical software (Research Triangle Institute, Research Triangle Park, NC), and this adjusted for the survey's complex sampling design.

Measure

Reported health status: This is people's assessment of their general well-being or health status, using the question 'Do you having an illness?' The question is a dummy variable, where 0 = bad reported health status (proxies by self-response to having

had at least one health condition), 1 = good reported health status (proxy by not reporting a health condition).

Household crowding index: This is the average number of people who occupy a single room. It is computed by dividing the total number of persons living in household by the number of rooms.

Physical environmental index: This is the physical infrastructure of the society. For our study, it is the summation of responses from people who indicated suffering landsides, property damage due to rains, flooding, and soil erosion

Affective psychological conditions: Human emotions are either in the positive or negative conditions.[36] Depression, anxiety, neuroticism and pessimism are seen as a measure of the negative psychological conditions that affect subjective well-being and happiness is as a result of a number of positive psychological factors.[37-40] It is found that happier people are more optimistic and as such conceptualize life's experiences in a positive manner.[41] Studies revealed that positive moods and emotions are associated with well-being as the individual is able to think, feel and act in ways that foster resource building and involvement with particular goal materialization.[42,43] For the purpose of this study, negative psychological conditions are presented by loss of a breadwinner and/or family member, family having lost its property, household member being made redundant, family having difficulties meeting its financial obligations.

Crime index: This is a mathematical index which is a summation of the number of crimes witnessed or experienced in a given year.

Crime index $= \Sigma\, k_i T_j$, where K_i

The equation represents the frequency with which an individual witnessed or experienced a crime, where i denotes 0, 1 and 2, in which 0 indicates not witnessing or experiencing a crime, 1 means witnessing 1 to 2, and 2 symbolizes seeing 3 or more crimes.

T_i denotes the degree of the different typologies of crime witnessed or experienced by an individual (where j = 1 …4, which 1= valuables stolen, 2 = attacked with or without a weapon, 3 = threatened with a gun, and 4 = sexually assaulted or raped. The summation of the frequency of crime by the degree of the incident ranges from 0 and a maximum of 51.

Education: The formal training and the imparting of knowledge. For this paper it is measured by the number of self-reported years of schooling.

Analytic Model

Multivariate logistic regression was used to fit the data of the current study. The literature was used to identify variables for the current paper as well as the dataset. Sixteen variables (Eqn [1]) were identified based on the literature and the 2002 Jamaica Survey of Living Conditions. We examined correlation matrices to ensure that multicollinearity was not an issue.

$H_t = (P_{mc}, ED, A_i, MR, AR, CR, PA, F, EN, C, M, FM; CH, PHI, HSB, Q)……$(Eqn. [1])

Eqn [1] expresses current health status H_t as a function of price of medical care P_{mc}, education of individual, ED; age of the individual, A_i, marital status, MR; area of residence, AR; Household crowding (proxy by average occupancy per room), CR; psychological conditions, PA; pregnancy, F; and the physical environment, EN; average consumption per person, C; number of males in household, M; number of females in household, FM; number of children in household, CH; health seeking behaviour proxies by having private health insurance coverage, PHI; visits to health practitioners, HSB, and per capita population quintile that the individual's family is below, Q. The model was modified because of non-response and low variability. Hence, a number of variables were not including in the final model, which is reflective of the population and the challenges of non-response and low variability. The following variables were omitted from the analysis because the non-response rates were high (i.e. in excess of 40%). These were positive affective psychological conditions (41.5%, n = 650). Marital status was omitted on two premises: 1) non-variability (99.7% of those who responded were never married (n = 672) given their ages); and 2) the non-response rate (57.1%, n = 893). Only 1.3% of the population were pregnant (n = 14) and this question had a non-response rate of 29.3% (n = 459).

The final model was based on those variables that were statistically significant ($p < 0.05$), and all other variables were removed from the final model ($p > 0.05$). Hence, the revised model is Eqn [2]

$H_t = (P_{mc}, ED, A_i, AR, CR, PA, EN, C, M, FM, CH, PHI, HSB, Q)…...$(Eqn. [2])

For the current study, only those variables that are statistically significant will be discussed and placed in a final model (Eqn. (3)]. The variables for the final model are cost of medical expenditure (P_{mc}), number of females in household (**FM**), having private health insurance coverage (**PHI**) and health-care seeking behaviour (**HSB**):

$H_t = (P_{mc}, FM, HSB, PHI)………..……....$(Eqn. [3])

Results

Table 1 presents information on the sociodemographic characteristic of the sample. The sample had 1,565 respondents: mean age, 14.4 years old (S.D. = 1.7 years); 8.3% reported an illness (or 91.7% reported good health status) and 1.3% was

Table 1: Descriptive Analysis of Variables of Target Cohort.

Variables	Descriptive Analysis
Age	14.4 (±1.7) years
Area of Residence	62%= Rural
	25.4% = Semi-Urban
	12.3% = Urban
Education	5.6% = Primary
	93.8% = Secondary
	0.6% = Tertiary
Consumption per person	US$ 652.30 (± $607.37)
Average income	US$3,699.00 (± $3,167.41)
Crowding	2.3 (±1.5 persons)
Self reported good health	91.7%
Pregnancy	1.3%

pregnant. The majority (62%) of the female respondents lived in rural areas, most (93.8%) had secondary school education and less than 1% had tertiary education.

Table 2 shows information on the population income quintile of respondents by crowding. The findings revealed that there is a statistical difference between number of persons living in a room and those in different income strata ($P < 0.001$). Furthermore, 3.4 (±2.0) people live in a room among those in the poorest 20%, followed by 2.5 (±1.3) people in a room among those in the poor quintile, 2.1 (±1.1) people among those in the middle quintile, 1.8 (±0.9) people among those in the wealthy quintile and 1.5 (±0.9) people among those in the wealthiest 20%.

Table 3 examines information associated with self-reported good health status of the respondents. From the regression analysis (see Table 3), four variables emerged as factors of self-reported good health status – cost of medical care, number of females in household, having private health insurance coverage and health-care seeking behaviour. The current factors of self-reported good health status of adolescent females account for 20.3% of the variability in reported good health status. Two of the four factors are negatively correlated with self-reported good health status (i.e., number of females in household and private health insurance coverage) and two are positively related to self-reported good health status (i.e., health-care seeking behaviour and cost of medical care). The most influential factors being

Table 2: Descriptive Statistics for household crowding by Per Capita Population Income Quintile.

Population Income Quintile	N	Household crowding	95% CI	
			Lower	Upper
Quintile 1= poorest 20%	302	3.4 ± 2.0	3.2	3.7
Quintile 2	319	2.5 ± 1.3	2.3	2.6
Quintile 3	357	2.1 ± 1.1	2	2.2
Quintile 4	348	1.8 ± 0.9	1.7	1.9
Quintile 5=wealthiest 20%	222	1.5 ± 0.9	1.4	1.6
Total	1,548	2.3 ± 1.5	2.2	2.4

F statistic [4, 1,547] = 94.94, $P < 0.001$

Table 3: Socio-demographic and Psychological Factors of Self-reported Health Status of sample.

Characteristic	Coefficient	Std Error	P	Odds ratio	95% C.I.	
					Lower	Upper
Quintile 3	0.456	0.369	0.217	1.58	0.77	3.25
Quintiles 4 or 5	-0.355	0.342	0.300	0.70	0.36	1.37
Referent group (quintiles 1 or 2)				1.00		
Cost of medical care	0.000	0.000	0.016	1.00	1.00	1.00
Crowding	-0.023	0.099	0.818	0.98	0.80	1.19
Physical Environment	0.646	0.366	0.078	1.91	0.93	3.91
Negative Affective Conditions	-0.029	0.036	0.422	0.97	0.91	1.04
Assets owned by household	-0.020	0.057	0.724	0.98	0.88	1.10
Age	0.004	0.081	0.962	1.00	0.86	1.18
Private Health Insurance (1=yes)	-3.373	0.460	<0.0001	0.03	0.01	0.09
Semi-Urban areas	-0.067	0.285	0.815	0.94	0.54	1.64
Urban areas	-0.048	0.339	0.887	0.95	0.49	1.85
Referent group (Rural areas)				1.00		
Number of Males	-0.052	0.118	0.660	0.95	0.75	1.20
Number of Females	-0.316	0.106	0.003	0.73	0.59	0.90
Number of Children	0.055	0.091	0.545	1.06	0.88	1.26
Average Consumption per person in household	0.000	0.000	0.585	1.00	1.00	1.00
Crime Index	-0.007	0.009	0.418	0.99	0.98	1.01
Average Income per person in household	0.000	0.000	0.491	1.00	1.00	1.00
Health-care seeking behaviour	0.226	0.097	0.020	1.25	1.04	1.52
Education	0.043	0.025	0.090	1.04	0.99	1.10
Constant	1.860	1.357	0.170	6.42		

Chi-square (19) = 113.87, P < 0.001
-2 Log likelihood = 587.25; Nagelkerke R^2 = 0.203
Overall correct classification = 92.7%; Correct classification of cases on good health = 99.2%
Correct classification of cases bad health = 18.8%

having ownership of private health insurance (Wald statistic = 53.7, 95%CI: 0.014, 0.085) followed by the number of females in the household (Wald statistic = 8.89, 95%CI: 0.592, 0.897); cost of medical care (Wald statistic = 5.75, 95%CI: 1.00, 1.00), and health care seeking behaviour (Wald statistic = 5.406, 95%CI: 1.036, 1.518). Furthermore, those who seek health care were 1.3 times more likely to report good health status and those who spend more on health care were 1.0 times more likely to indicate good health status. On the other hand, those who have private health insurance coverage were 0.97 times less likely to indicate self-reported good health and adolescents who had more females in their household were 0.27 times less likely to indicate good health status.

Discussion

In this study, the majority of female adolescents reported that they have good health (92 out of every 100). The determinants of good self-reported health status in female adolescents in Jamaica were family owned private health insurance coverage, number of females in household, cost of medical care and health care seeking behaviour (i.e. visits to health care practitioners). The findings of this study concur with those of another study which assessed youth health in the Caribbean countries, including Jamaica, where four in five adolescents state that their general health was good.[44] This latter study reported that younger female adolescents are more likely to report better health and, by age 16, one in six youths reported fair to poor health status.[44] In addition, almost 10% of the young people (more boys than girls) report having a handicap, disability, or chronic illness that limits their activities. A study by Bourne & McGrowder found that among young adult Jamaicans (ages 15-30 years) who indicated having had chronic non-communicable diseases, 4.3% indicated diabetes, 8.7% had hypertension and 1.4% reported arthritis compared to 18.3% with diabetes, 31.7% reported hypertension and 7.1% with arthritis among those ages 31-59 years old.[45] Headaches, physical development and sleep problems are the most common health concerns of young people in the Caribbean.[44] Poor health in adolescents is positively associated with risk factors such as abuse and parental problems and negatively associated with protective factors such as connectedness to family and community.[46] Resnick et al. found that parent/family connectedness and perceived school connectedness were protective against every health risk behavior measured, except history of pregnancy.[47]

In Jamaica, approximately 9% of the population is covered by private health insurance .[31] Persons in the wealthiest consumption quintile were more than four times more likely to have health insurance coverage than those in the poorest quintile, 35 %and 8.5 %respectively.[48-50] The family's health care insurance coverage was the main determinant of good self-reported health care status of the female adolescents in Jamaica. Those young females whose family have them on private health insurance indicated a lower health status compared to another young female whose family does not have private health insurance, suggesting that health insurance is purchased in keeping with the high probability of the individual being likely to become ill (or knowing that the individual suffers from a particular health condition).

Poverty and lack of health insurance are two powerful socioeconomic influences that predispose young people to a wide variety of health problems. Poor adolescents typically experience more health and health-related problems than non-poor adolescents with respect to acute and chronic conditions that restrict activity; overall self-reported fair or poor health; and higher rates of pregnancy, cigarette smoking and depression.[51] Adolescents from poor families and those without health insurance are more likely to seek routine medical care from a public hospital, outpatient clinic, emergency department, or public health centre. Uninsured adolescents are more likely to miss school and fall behind academically, which may affect their ability to reach their full potential.[52] In a study done by Newacheck, McManus, & Brindis one in every seven adolescents in the United States, aged 10 - 18, is uninsured.[53] Uninsured adolescents, as opposed to insured adolescents, are more likely to be members of poor and minority families.[53]

The ability of the families of adolescents to afford health care is based on their economic status, which applies to the general society.[54] An adolescent family's economic status can have a strong influence on the adolescents' perceptions of health, their health behaviors and use of health care.[55, 56] The cost of health care was one of the determinant factors of good health status among the female adolescents in Jamaica. In a study by Halcón et al. assessing youth health in the Caribbean Community and Common Market countries, including Jamaica, most adolescents (85.9%) reported that they have a place where they usually receive medical care.[44] However; only 36.2% have had a checkup in the last two years. Less than half have seen a dentist in the past two years. If they need contraception, students would go, first to physicians, followed by drug stores, family planning clinics, and public health clinics. Males are consistently less likely to use health care services than females; and they are more likely to believe adults will not provide confidentiality.[44]

According to Figueroa et al. health-seeking behaviours and/ or access to healthcare in Jamaica appear to have improved between 1993 and 2000 since significantly fewer persons in 2000 than in 1993 reported never having had their blood pressure checked and fewer women said they had never had a Pap smear.[57] This may be due to a growing health consciousness in sectors of the society.[57] In this study, health seeking behavior was one of the determinants of good health status of female adolescents. The use of health care services depends on health status of respondents. The better the health status of an adolescent the lower the health care services utilization and vice-versa. The ability of adolescents to obtain health care services is an important indication of whether the health care system is meeting their needs. Difficulties experienced by adolescents in accessing health care include: long distance to health care centres, lack of transport services and long waiting time for the health care services.[58-63] Understanding adolescents' health seeking behaviour is critical for quality service improvement.

In a study by Halcón et al. of adolescents in Caribbean countries, crowding was a significant concern for a number of young people with 29% reporting 2 - 4 people sleep in a room and an additional 3.4% indicate more than 5 people sleep together.[44] In this study, crowding did not affect the health status of young females neither did negative affective psychological conditions; family assets ownership, household income and

consumption, and education. It was also discovered that there was no statistical difference between the health statuses of those who dwelled in rural, urban or other towns. The number of males in the household and the number of children in the household did not influence the quality of life of young females. However, the number of females in the household inversely influenced self-reported good health status of young female adolescents.

Although there is no statistical significance between the health status of poor and wealthy young females, nearly three quarters of young females in the study resided in the rural areas (62%) where incidences of poverty are traditionally higher than those in the urban areas. This further substantiates the fact that household economic status is directly linked to health of children and rural children are perhaps more vulnerable than their urban counterparts. There are several implication associated with phenomenon for young females, particularly those from rural households. Among them are vulnerability to diseases brought on by nutritional deficiencies, weak immune systems, sexual behaviour and low academic performance. These invariably impact on their life chances, psychological self-actualization and eventually their inability to break the cycle of poverty.[6, 10, 11] Hence, any policy that seeks to address well-being of female adolescents must incorporate the advancement of the household, and the social and economic factors, coupled with the needs of the individual.

Conclusion

The health status of young females in Jamaica is substantially impacted on by family owned private health insurance coverage, number of females in household, cost of medical care and health care seeking behaviour (i.e. visits to health care practitioner). Embedded in this study is the importance of family through either the purchase of health insurance, coverage of the cost of medical care and health visits of young females. This study provided insights into social factors that determine the good health status of female adolescents, which will enable health care practitioners to devise appropriate programmes to address the health concerns of this group.

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