GrandFamilies
The Contemporary Journal of Research, Practice and Policy

GrandFamilies: The Contemporary Journal of Research, Practice and Policy

Volume 4
Issue 1 *Special Issue: The Global Phenomenon of GrandFamilies*

Article 6

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Cover Page Footnote
Acknowledgements: This project was supported by a grant from The National Health Fund, an agency of the Ministry of Health, Jamaica.

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Research Article

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Abstract

Grandparents play invaluable caregiving roles in the general upbringing of grandchildren. The objective of the present study is to provide a profile of grandparents providing care to co-resident grandchildren younger than 18 years old in Jamaica. A subsample of 451 grandparents providing care to co-resident grandchildren under 18 years old was derived from a larger nationally-representative community-based study of 2943 older adults residing in Jamaica. Data pertaining to caregiving, demography, health, socioeconomic status, and social participation were analysed using bivariate and multivariate analyses. Seventy one percent of grandparents were involved in regular care of their grandchildren. Hypertension (65.9%), arthritis (39.5%) and diabetes (27.2%) were the most common non-communicable diseases among grandparents. Approximately 60% of grandparents relied on family

members for income and few reported other sources. Attendance at religious services was high at 78% while only about 40% were involved in voluntary activities. Only age was confirmed as a significant predictor of frequency of care in multivariate analyses with grandparents 80 years and older being 64% less likely to be involved in providing regular care compared to 60-69 year olds. In conclusion, grandparents are actively engaged in the provision of care to grandchildren. Specific health and social interventions are required to support and empower grandparents in their caregiving roles.

Key words: *grandparents, grandparenting, grandchildren, caregiving, Jamaica*

Population aging is one of the demographic successes of current times with increases in the number of older persons and especially the old-old, i.e. those over 80 (United Nations, 2002; United Nations, Department of Economic and Social Affairs, Population Division, 2015). With the advent of population aging has come the recognition of the challenge of keeping older persons healthy and integrated along the life-course after 60. Among the many questions raised is the question of the role of grandparenting in the process. One of the main determinants of healthy aging is full integration and participation of older persons in society. Social participation refers to the integration of older persons into the social networks of the family and community (Bassuk, Glass, & Berkman, 1999; Berkman & Syme, 1979; Gilmour, 2012, Hammel et al., 2008; Timonen, Kamiya, & Maty, 2011). Intergenerational relationships are an important means of social participation. They have been identified as crucial to healthy aging with steps taken to promoting them as a strategy to achieve that goal.

Intergenerational relationships are also an important contributor to older persons' wellbeing (United Nations Economic Commission for Europe, 2009).

In a study of 4378 persons 65 and older, Kang & Michael (2013) identified positive but non-parallel relationships between social contacts and self-rated health. Other studies also underscore this important contribution to health (Glei et al., 2005; Holt-Lunstad, Smith, & Layton, 2010; United Nations Economic Commission for Europe, 2009; Steptoe, Shankar, Demakakos, & Wardle, 2013). By providing varying forms and levels of care to grandchildren (grandparenting), older persons can play their social role yielding mutual benefits for themselves and their grandchildren (Zhou, Mao, Lee, & Chi, 2016). This occurs at an opportune time for many grandparents as social and demographic changes (including retirement and widowhood), as well as functional declines, have the potential to reduce their levels of social participation.

In recent times, there has been increasing awareness of the changing structure of families and the roles of family members. The caregiving responsibility for children has sometimes shifted from the biological parents to that of other relatives, in what is known as kinship care arrangements (Tremblay, Barber, & Kubin, 2014). Some authors have argued that primarily "maternal kin" and, in particular, grandmothers are often the main caregivers in these arrangements (Thomas-Hope, 1992; Roopnarine, 2004; Smith & Green, 2007; Gray & Samms-Vaghan, 2009). Grandparents are noted to play an important role in providing care for younger grandchildren (Gray, Misson, & Hayes, 2005, Ochiltree, 2006). According to Dunifon and Bajracharya (2012), the decrease in the number of children per family may potentially increase the time grandparents have to spend with children. They further identified the age of grandparents and grandchildren as an important variable affecting the relationship between grandparents and

children. Additionally, black grandparents were identified as being more engaged in the parenting of grandchildren (Dunifon & Bajracharya, 2012). Grandparent care has been identified as the preferred care for young children as grandparents can be trusted, are affectionate, are influential, are very protective of their grandchildren, are more flexible, and are generally a more inexpensive childcare option (Greenblat & Ochiltree, 1993; Gray et al., 2005; Ochiltree, 2006; Fogarty, 2007; Brhel, 2013; Geurts, van Tilburg, Poortman, & Dyskstra, 2015; Hicks Patrick, Stella Graf, Nardorff, & Hayslip, 2015).

Background on Jamaica

Jamaica is a small island state of 3 million people, with a GDP of US $14.01 billion in 2015 (Trading Economics, 2016). Approximately 60% of Jamaica's GDP is derived from tourism and remittances (Index Mundi, 2016). The organization of the Jamaican family structure is complex and is constantly evolving. The Jamaican family life has been shaped by the country's African origins and more recently by European, Chinese, Indian, German, and Lebanese influences, although the population remains predominantly black (90.9 %) (Jamaica National Heritage Trust, 2016; Robinson, 2016). Family pluralism is evident given the gradual decline in the nuclear family that has been replaced by the sibling, common-law union, and single-parent households (Bailey, Branche, & Le Franc, 1998; Hill, 2011).

Approximately 80% of Jamaican children are born outside of wedlock, and this high statistic contributes to the large numbers of single-parent households (Henry, 2013; Robinson, 2014). Female-headed households (46.4%) have the larger proportion of children (30.4%) in comparison to male-headed households (53.6%) which have a larger proportion of working age adults (66.7%). Female-headed households also have a higher age dependency ratio

(63.4%) and lower consumption levels, as well as being involved in the care of more children and dependent adults in comparison to their male counterparts (Hill, 2011; Planning Institute of Jamaica, 2016).

The current generation of grandparents 60 years and older, belong to an era when an average family size was 6.2 persons. Average family size is now 3.1 as the fertility rate has fallen from a high of 5.42 in 1960 to 2.05 in 2014 (World Bank, 2016). The main parenting style in Jamaica has been traditionally authoritarian, with parental warmth being commonplace (Roopnarine, Bynoe, & Singh, 2004; Lipps et al., 2012). Households comprising extended families are not uncommon in Jamaica and provide invaluable social support, "*emotional expansiveness*," and compensatory networks for both children and adults (Brodber, 1975). The situation is perhaps best described as one in which there are multiple caregivers, often including: one or both parents, grandparents, and other family members. Grandparents who are involved in the care of their grandchildren in Jamaica are either a part of these family units or have primary responsibility for grandchildren in the absence of parents. In the latter case, grandmothers more than grandfathers are the heads of these households (Barrow, 1996; Roopnarine, 2004; Roopnarine, Bynoe, Singh, & Simon 2005; Gray & Samms-Vaughan, 2009). A specially commissioned sub-report from the 2001 Population and Housing Census of Jamaica indicated that 24.5% of children 0 to 14 years old lived in households headed by a grandparent. A similar proportion (24.7%) lived in households with both parents, while 40% lived with one parent and 8.44% lived with other relatives (Caribbean Community, 2009).

The most common reasons put forward for grandparents bearing primary responsibility in the absence of parents are: abandonment, neglect, physical, emotional

and sexual abuse, incarceration[1], migration of parents (primarily as a means of attaining better socioeconomic and educational status for oneself and family), and the increasing numbers of females in the labor market (Plaza, 2000; Thomas-Hope, 2002; Jones, Sharpe, & Sogren, 2004; Planning Institute of Jamaica, 2005, Williams, Brown, & Roopnarine, 2006; Jokhan, 2007; Bakker, Elings-Pels, & Reis, 2009; The Gleaner, 2009a; The Gleaner, 2009b; Henry Lee & Henry, 2010 Thomese & Liefbroer, 2013). Approximately 17.6% (706,000) of immigrants in the United States of America are from Jamaica (U.S. Census Bureau, 2015). According to the 2011 Population and Housing Census, a total of 21, 146 Jamaicans migrated to reside overseas during the year 2010. Approximately 53.8% of these migrants are between 20-49 years (Statistical Institute of Jamaica, 2011). There is no information about whether families migrated together or whether certain family members, specifically children, are left behind. One can only assume that there is a strong possibility of children being left behind.

Grandparenting is sanctioned for specific scenarios in the Jamaican policy landscape. The Children (Guardianship and Custody) Act (1957) and the Maintenance Act (2005) of Jamaica facilitate the legal assumption of guardianship responsibility for unmarried grandchildren by grandparents if the parent(s) are unable to do so as a result of physical or mental infirmity or disability and death. When parents are alive, grandparents can also apply for legal guardianship provided that they have adequate justification. Anecdotally, grandparents typically assume responsibility through less formal arrangements.

[1] In a 2005 commissioned report by the Planning Institute of Jamaica, it was determined that 44% of incarcerated females were heads of households prior to their incarceration. The report also highlighted that female incarceration had negative emotional and behavioral impact on children.

The situation in other Caribbean countries is similar to that in Jamaica. For example, a 2005 Caribbean migration study revealed that a large number of school-aged children in Dominica (48% of primary school children and 36% of secondary school children) co-resided with their grandparents. Concerns were raised about the capacity of older grandparents to provide adequate health care, quality nutrition, and attention, as well as the impact of this on academic performance among grandchildren (Bakker et al., 2009). While several Caribbean studies have highlighted the caregiving roles of grandparents, they have not focused on examining facilitative features in relation to their health and socioeconomic status. An evidenced-based discourse on this is therefore needed. In recognition of population aging and the challenges related to financial wellbeing and health in old age, this research is important for proposed interventions to be effective.

The older adult population has long been described as heterogeneous (Grigsby, 1996). This heterogeneity occurs with respect to, *inter alia*, health, financial status, functionality, and levels of social participation (Seltzer & Yahirun, 2013). Despite this variability, older age increases one's risk of non-communicable diseases, financial vulnerability, and reduced functionality/increased disability (Wilks, Tulloch-Reid, McFarlane, & Francis, 2008; Chappell & Cooke, 2010). These conditions can hinder grandparents' ability to fulfill their caregiving roles and in so doing jeopardize the health and wellbeing of grandchildren and grandparents themselves. While better health may predict involvement in caregiving, some grandparents feel an obligation to provide care even in conditions of ill health.

Theoretical Framework

There are two main theoretical perspectives that inform this inquiry into grandparenting: role theory and

ecological models. According to role theory, a role is a structural position an individual holds within a social group, which impacts on the individual's behavior (Linton, 1945). This position in turn influences the behavior of the individual who is charged with the responsibility to carry out such roles. As a result, interaction with others may vary depending on one's role at a particular point in time. It has been shown that individuals carry out their roles with commitment, self-esteem, meaning, and self-identity (Thiele & Whelan, 2008). Mahne and Motel-Klingebiel (2012) found in a study in Germany that perceptions about the importance of grandparents' roles influenced relationships between grandparents and grandchildren.

Ecological models were initially developed to understand the dynamic interrelationships of families. The ecological model first described by Bronfenbrenner (1990) states that an individual's development is directly affected and influenced by his environment on three different levels: the microsystem, the mesosytem, and the exosystem. The microsystem is the level that is closest to the individual and in which there is active participation (family, school, and peer group setting). The mesosystem provides a connection between the structures of the mesosystem (for example, the connection between school teacher and parents of students) (Berk, 2000). In the exosystem, the individual may not be directly involved/engaged, however the changes at this level may affect the individaul in one way or another (for example a child being affected by his parents' work schedule and having to spend more time with his grandparents instead of parents) (Paquette & Ryan, 2001). This model was later applied to grandparenting by Creasey looking at the broader family system to examine the relationship in families and the importance of grandparents in the development of grandchildren (Creasey, 1993). It also looks at other ecological factors including the wellbeing of grandparents (Attar-Schwartz, Tan, &

Buchanan, 2009). The World Health Organization (WHO), a lead advocate for active aging, also embraces the ecological role theory. The World Health Organization's (WHO) definition of active aging emphasizes the importance of the social and physical environments that shape the pattern of health and the response to it (Fielding, Teutsch, & Breslow, 2010). The Institute of Medicine (2003) also uses the ecological theory and defines it as a model of health that emphasizes the linkages and relationships between multiple determinants of health.

In view of the foregoing perspectives, we have sought to better understand the situation in the Jamaican grandparent population based on data from the 2012 study on the Health and Social Status of Older Adults in Jamaica. Although it has long been observed that grandparents in Jamaica play an important role in the lives of their co-resident grandchildren, a general profile of such grandparents has not been previously provided. Further, the capacity of grandparents to provide care has not been extensively studied. This paper therefore adds to the literature about grandparenting in Jamaica, a middle income developing country, and provides a context for further examination of these issues in countries of similar demographic, developmental, and cultural landscapes.

Method

Study population

In 2012, a nationally representative community-based study, "The Health and Social Status of Older Adults in Jamaica," was conducted, comprising 2,943 persons 60 years and older living in Jamaica. The cross-sectional study included four of the country's fourteen parishes which together account for 47% of the total population of Jamaica with sufficient socioeconomic and demographic variation to facilitate a study of this nature. A questionnaire comprised of 200 questions was interviewer-administered

over a six-month period. Survey communities were identified through a two-stage cluster sampling procedure. Beginning at a random point within each community, trained interviewers went house to house and interviewed one adult per household (of at least 60 years) who consented to participating in the study. In the event that an eligible individual could not provide reliable responses due to physical or cognitive impairment, a knowledgeable household member provided proxy responses. Questions addressed health and social status and captured information on, *inter alia*, medical diagnoses, physical and cognitive abilities, financial status, living arrangements, caregiving, and social participation. A more comprehensive description of the data collection and analysis methods has been documented by Mitchell-Fearon et al. (2015). The Ethics Committee of the Faculty of Medical Sciences of The University of the West Indies, Mona approved the study and permitted statistical analysis with de-identified data. Study participants were required to confirm their voluntary participation in writing with assurance of anonymity, no-harm to respondents, and confidentiality.

This paper represents a secondary analysis of data for a sub-sample of 451 respondents who reported providing help/care for co-resident grandchildren who were under 18 years. Figure 1 illustrates the identification of this sub-sample. Among the 2,469 participants who responded to the question on grandchildren, 91.9% or 2,268 were grandparents, while 192 (7.8%) respondents had no grandchildren and 9 (0.4%) did not know if they were grandparents. Of the respondents having grandchildren in Jamaica, 60.3% provided care. Among respondents providing care, 39.7% (n = 451) were involved in providing care to co-resident grandchildren younger than 18 years old.

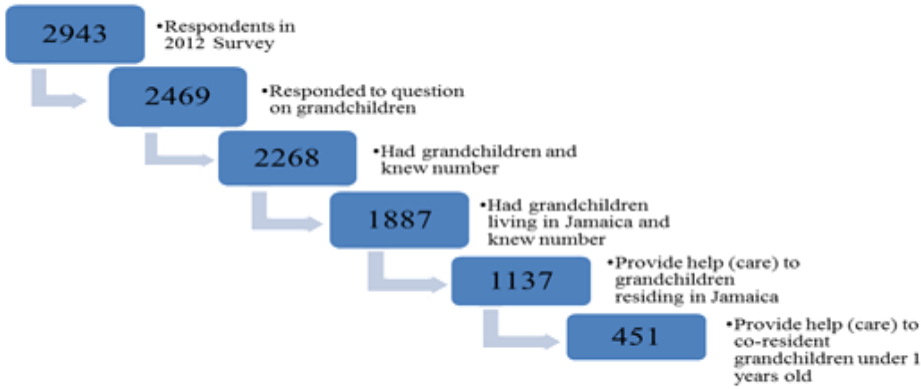

Figure 1. Process of respondent sub-sample selection

Operational Definitions and Variables

Caregiving functions were operationalized to focus on grandparents who self-identified as having responsibility in helping co-resident grandchildren who were younger than 18 years old. Respondents were asked "Do you help with the grandchildren," followed by "If yes, how frequently do you give help?" The options "daily," "weekly," "monthly," and "occasionally" were provided. Frequency of caregiving was dichotomized: grandparents who provided help occasionally or monthly were classified as providing irregular care, while those who indicated weekly or daily help were classified as providing regular care.

The co-variates of interest in the present analysis were basic socio-demographic variables such as age, sex, educational attainment, union status, and place of residence, as well as socioeconomic characteristics such as living arrangements and income, and social participation.

Self-reports of doctor-diagnosed conditions were also analyzed. The variables were selected in keeping with the key study objectives of describing the caregiving grandparent and the availability of data for this secondary analysis.

Respondents stated their ages and highest level of educational attainment. Sex was recorded based on observation by the interviewer, and place of residence was classified as urban or rural based on official designations from the Statistical Institute of Jamaica. Age was recoded in three categories: 60-69 years (young-old), 70-79 years (middle-old) and 80 years and older (old-old). Highest educational attainment was classified in three categories: primary and below, secondary, and post-secondary. Responses to union status were collapsed into two categories: in union (which included married and living as married) and not in union (which included widowed, divorced, separated, single).

Economic status was measured in two ways: i) respondents were asked "How many people living in the house receive a salary or income of any kind?" and ii) a "yes" or "no" answer was sought to the question "Do you get income from [named source]?" A response was obtained for each source. The sources analyzed in this paper were: family, Government of Jamaica Pension, savings/investments, livestock/farming, National Insurance Scheme (NIS) (a compulsory contributory funded social security scheme which pays out specific benefits depending on the status of the insured), the Programme of Advancement Through Health and Education (PATH – a conditional cash transfer programme which targets the poor), and wages.

Health status was determined by self-reports of doctor-diagnosed hypertension, diabetes, arthritis, stroke, coronary heart disease, and cancer (any site), and by results from screening instruments for cognitive impairment

(Folstein, Folstein, & McHugh, 1975), and depression (Zung, 1963). Respondents were asked "Has a doctor ever told you that you have [named condition]?" Functionality was also assessed based on responses to items in the Katz Index of Independence in Activities of Daily Living (Katz, Down, Cash, & Grotz, 1970). Social participation was measured by questions on volunteering, attendance at religious services, and visiting friends. For volunteering, respondents provided a yes/no response to the question "Are you involved in any voluntary activities?" For attendance at religious services and visiting friends, respondents were asked to indicate how often in the last 12 months they had done the activity. Options "Never," Once or twice per year," "Once or twice per month," "Once or twice per week," and "Daily" were provided. Frequencies of at least once per month and more often were termed regular.

Data Analysis

Descriptive analyses were undertaken to provide a demographic, socioeconomic, social and health profile of grandparents with co-resident grandchildren under 18 years old. Chi square analyses were used to explore associations between caregiving frequencies (Regular versus Irregular) and the various socio-demographic, economic, health, and social variables measured. A p value of less than .05 denoted statistical significance. Only significant variables were used to develop a logistic regression model to identify variables independently associated with regular caregiving. Data were analyzed using SPSS software, version 21.

Results

Approximately 59.9% of grandparents with co-resident grandchildren under the age of 18 years reported providing regular care to their grandchildren. Table 1 shows the demographic, health, economic, and social

profile of grandparents broken down by caregiving frequency. The majority of grandparents were female (63.9%), in the 60-69 age group (57.1%), had primary or lower level education (80.5%), were not in union (61.4%), and resided in urban communities (71.0%). Nearly eight out of every 10 grandparents resided in households where at least one member was in receipt of a salary. Family was the most commonly reported income source for grandparents (59.6%). With the exception of hypertension, the majority of grandparents did not report any of the non-communicable diseases (NCDs) assessed. Regular attendance at religious services was commonly reported by grandparents (77.6%), while approximately four out of 10 grandparents were engaged in voluntary activities and visiting friends (41.4% and 40.7% respectively). Chi square analyses suggested that significantly larger proportions of persons of younger age, without diabetes, with no/mild cognitive impairment, and who were involved in voluntary activities were more likely to be regular caregivers than their counterparts.

Logistic Regression

The four significant variables from the Chi square analyses (age, diabetes, cognitive impairment, and volunteering) were entered into a regression model to identify independent predictors of frequency of care. The Hosmer-Lemeshow goodness-of-fit test confirmed that the model was appropriate for the data (p = .612). Table 2 shows that only age remained statistically significant after this adjustment, with persons 80 years and older being 64% less likely than 60-69 year olds to be involved in regular caregiving activities for their co-resident grandchildren (p = .007).

Table 1
Demographic, Health and Social Involvement of Grandparents with Co-resident Grandchildren under 18 years old, by Caregiving Frequency

Variable	Caregiving Frequency		Total, *n* (%)	X^2, *p* value
	Regular (Daily, Weekly) *n* (%)	Irregular (Monthly, Occasional) *n* (%)		
Sex (*n* = 380)				
Male	91 (66.4)	46 (33.6)	137 (36.1)	2.32, 0.13
Female	179 (73.7)	64 (26.3)	243 (63.9)	
Age group (*n* = 378)				
60-69	167 (77.3)	49 (22.7)	216 (57.1)	14.24, 0.00*
70-79	80 (67.8)	38 (32.2)	118 (31.2)	
≥80	22 (50.0)	22 (50.0)	44 (11.6)	
Educational attainment (*n* = 380)				
Primary and below	217 (70.9)	89 (29.1)	306 (80.5)	0.56, 0.75
Secondary	33 (68.8)	15 (31.2)	48 (12.6)	
Post-secondary	20 (76.9)	6 (23.1)	26 (6.8)	
Union status (*n* = 378)				
In union	105 (71.9)	41 (28.1)	146 (38.6)	0.66, 0.80
Not in union	164 (70.7)	68 (29.3)	232 (61.4)	
Residence (*n* = 376)				
Rural	76 (69.7)	33 (30.3)	109 (29.0)	0.18, 0.67
Urban	192 (71.9)	75 (28.1)	267 (71.0)	
At least one household member has a salary (*n* = 350)				
Yes	192 (69.1)	86 (30.9)	278 (79.4)	0.0, 0.95

No	50 (69.4)	22 (30.6)	72 (20.6)	
Grandparents' income source				
Family (*n* = 369)				
Yes	58 (71.8)	62 (28.2)	220 (59.6)	0.08, 0.78
No	105 (70.5)	44 (29.5)	149 (40.4)	
GOJ pension (*n* = 366)				
Yes	33 (75.0)	11 (25.0)	44 (12.0)	0.33, 0.56
No	228 (70.8)	94 (29.2)	322 (88.0)	
Savings/Investments (*n* = 364)				
Yes	14 (77.8)	4 (22.2)	18 (4.9)	0.41, 0.52
No	245 (70.8)	101 (29.2)	346 (95.1)	
Livestock &/Farming (*n* = 365)				
Yes	13 (68.4)	6 (31.6)	19 (5.2)	0.08, 0.78
No	247 (71.4)	99 (28.6)	346 (94.8)	
NIS (*n* = 368)				
Yes	53 (63.9)	30 (36.1)	83 (22.6)	2.39, 0.12
No	207 (72.6)	78 (27.4)	285 (77.4)	
PATH (*n* = 365)				
Yes	32 (78.0)	9 (22.0)	41 (11.2)	1.13, 0.29
No	227 (70.1)	97 (29.9)	324 (88.8)	
Wage (*n* = 366)				
Yes	38 (74.5)	13 (25.5)	51 (13.9)	0.30, 0.59
No	223 (70.8)	92 (29.2)	315 (86.1)	
Hypertension (*n* =378)				
Yes	177 (71.1)	72 (28.9)	249 (65.9)	00.01, 0.91
No	91 (70.5)	38 (29.5)	129 (34.1)	
Diabetes (*n* = 375)				
Yes	64 (62.7)	38 (37.3)	102 (27.2)	
No	202 (74.0)	71 (26.0)	273 (72.8)	4.56, .033*
Arthritis (*n* = 377)				
Yes	101 (67.8)	48 (32.2)	149 (39.5)	1.31, 0.25
No	167 (73.2)	61 (26.8)	228 (60.5)	
Cancer (*n* = 373)				
Yes	8 (88.9)	1 (11.1)	9 (2.4)	1.39. 0.24
No	258 (70.9)	106 (29.1)	364 (97.6)	
Heart Disease (*n* = 377)				
Yes	16 (69.6)	7 (30.4)	23 (6.1)	.03, 0.87
No	252 (71.2)	102 (28.8)	354 (93.9)	

Stroke (*n* = 376)				
Yes	18 (66.7)	9 (33.3)	27 (7.2)	0.27, 0.61
No	249 (71.3)	100 (28.7)	249 (92.8)	
Cognitive Impairment (*n* = 367)				
Severe	14 (45.2)	17 (54.8)	31 (8.4)	11.40, 0.00*
No to mild	248 (73.8)	88 (26.2)	336 (91.6)	
Activities of daily living (*n* = (377)				
Dependent	10 (71.4)	4 (28.6)	14 (3.7)	0.0, 0.96
Independent	257 (70.8)	106 (29.2)	363 (96.3)	
Depression (*n* = 334)				
Moderate to severe	35 (62.5)	21 (37.5)	56 (16.8)	2.52, 0.11
No to mild	203 (73.0)	75 (27.0)	278 (83.2)	
Attend religious services regularly (*n* = 339)				
Yes	194 (73.8)	69 (26.2)	263 (77.6)	1.86, 0.17
No	50 (65.8)	26 (34.2)	76 (22.4)	
Volunteer (*n* = 370)*				
Yes	121 (79.1)	32 (20.9)	153 (41.4)	5.78, 0.02
No	147 (67.7)	70 (32.3)	217 (58.6)	
Visit friends regularly (*n* = 290)				
Yes	86 (72.9)	32 (27.1)	118 (40.7)	0.40, 0.53
No	131(76.2)	41 (23.8)	172 (59.3)	

* Indicates statistically significant associations.

Table 2
Adjusted Odds Ratios for Likelihood of Providing Care to Co-resident Grandchildren under 18 years old

Variable	Odds Ratio (95% Confidence Interval)	*p* value
Age		
60-69	1.00	-
70-79	0.75 (0.43, 1.28)	0.29
≥80	0.36 (0.17, 0.76)	0.01*
No diabetes	1.00	-
Diabetes	0.66 (0.39, 1.11)	0.012
No/Mild Cognitive impairment	1.00	
Severe Cognitive impairment	0.49 (.21, 1.10)	0.09
Not involved in voluntary activities	1.00	-
Involved in voluntary activities	1.54 (0.92, 2.58)	0.10

* Indicates statistical significance

Discussion

This paper gives a profile of grandparents in Jamaica who provide care to their co-resident grandchildren who are under 18 years old. The majority of grandparents provided care on a regular (weekly/monthly) basis. This finding illustrates the emphasis grandparents placed on their caregiving role, the well-knit microsystem among grandchildren and grandparents, as well as the invaluable benefit that grandparents provide to both grandchildren and their parents. The intergenerational interactions/exchange confirm the high levels of

involvement of grandparents in the lives of their grandchildren in this setting as was previously described (Barrow, 1996; Roopnarine, 2004; Roopnarine et al., 2005). This is advantageous given the acknowledged importance of intergenerational activity in promoting healthy aging and the positive impact of grandparenting on self-esteem and resilience among older persons (Butts & Chana, 2007; World Health Organization, 2015). The characteristics of the grandparents generally mirror that of the wider population of older persons in Jamaica which reflect high levels of functionality (despite the high prevalence of non-communicable diseases) for the majority but vulnerable financial status and low levels of social participation, except for attendance at religious services (Eldemire-Shearer, James, Waldron, & Mitchell-Fearon, 2012; Mitchell-Fearon et al., 2015; Willie-Tyndale, et al., 2016). Age was the only factor that was significantly different between regular and irregular providers of care with the old-old being significantly less likely to provide regular care.

Although not stated, it can be inferred that much of the financial support from family is provided locally rather than from families overseas. Older adults represent the smallest cohort of remittance beneficiaries in Jamaica, a mere 7.7%. The primary beneficiaries are persons between the ages of 26-40 years old, who accounted for 44.4% of beneficiaries (Ramocan, 2010). While this data is instructive, it is limited in its presentation of the actual end-user/recipient of remittances. Although older adults are marginally represented as remittance beneficiaries, it is highly likely that they benefit from remittances received by other family members and vice versa (for example, a grandparent collects remittances for expenses related to the care and development of their grandchildren).

At the mesosystem level, a noted gap is apparent between grandparents in the microsystem and their limited

access to financial resources. This inequity has resulted in a major strain on family resources, with more than 50% of grandparents relying on family members, and a large proportion without other income sources. The dyadic tension of work and retirement, as well as salary and pension plans (replacement income) is thus apparent. It is evident that grandparents who had made minimal personal preparations for retirement and old age, appeared to be more vested in their children/family members as their old-age pension coverage (Stewart, 2009 and Morris, James, & Eldemire-Shearer 2010). Indirect effects could also arise. It is often accepted as a cultural norm that many grandparents will sacrifice their needs, and in some instances anticipated retirement plans, for that of their grandchildren, especially if they have custodial responsibilities. Limited finances may affect their ability to take care of their own daily and basic needs including everyday expenses for food, clothing and shelter as well as health needs such as medications and doctor's visits (Nussbaum & Coupland, 2004; Stinson, 2010). This circumstance can result in an increase in household poverty as well as adverse health outcomes, including poorly managed NCDs, sickness, hospitalization, and death.

Another dimension to this discussion on grandparenting, though not a direct finding of this study, is brought to the fore. Long term care in the predominantly black communities of the Caribbean has traditionally been provided by families (Eldemire-Shearer, 2008; Rawlins, 2015). Approximately 50% (n=1137) of grandparents in the national survey on which this study is based were either not providing care for grandchildren and or did not have grandchildren residing in Jamaica. With so many persons having grandchildren who are potentially "unavailable" to provide care, juxtaposed with the high level of NCDs, questions and concerns emerge about the availability of family caregivers for older persons when needed.

The limitations of this study are primarily those of data availability typically associated with secondary analyses. The available data did not allow us to distinguish between grandparents who had custodial responsibility for grandchildren and those who resided with their grandchildren in extended families where one or more parent may be present. This information would have clarified the specific roles of grandparents in caregiving and allowed for better interpretation of the implications of certain characteristics of the grandparents, such as their financial status. Our study focused on frequency of care among grandparents with co-resident grandchildren. We could not include grandparents without co-resident grandchildren (even though some would have been involved in providing care) because we confined our analyses to grandchildren who are minors (under 18 years), and the survey captured age and relationship only for household members.

Policy Implications

Appropriate policy interventions are required to support and encourage the current role of grandparents in providing care for grandchildren. Policies and programmes, which target children and parents, need to be more comprehensive in targeting grandparents as many have daily responsibilities for the care and wellbeing of grandchildren. The financial standing of the grandparents in the study is of major importance in so far as their health and wellbeing are concerned. The level of pension coverage provided by the National Insurance Scheme (social security) (22.6%) was equivalent to the national average of Jamaica which is 11% lower than other developing countries (Christie, 2013). As a result of the limited personal financial support among grandparents, there is a high level of dependency on family members. National interventions are critical to boosting the pension

coverage among the Jamaican populace to ensure a greater level of financial independence in old age. This can be achieved through public education programs, which address issues relating to financial health and financial literacy.

The presence of NCDs among grandparents indicates the need for regular access to health care and or services. Many of these health services including medication are costly and in some instances prohibitive for some older adults who neither have insurance nor are enrolled in the government drug subsidy programme. By enrolling in drug subsidy programs such as the Jamaica Drug for the Elderly Programme and the National Health Fund and also social health programs such as the insurance elements of the National Insurance Scheme, grandparents can significantly reduce their out-of-pocket health care costs and increase their disposable income. In other countries, similar drug subsidy programs may exist, which reduces the need for major out-of-pocket spending on the part of older adults, and by extension grandparents, for prescription drugs.

Health and wellness programs are also critical to ensure the functional capacities of grandparents are retained. As highlighted in the study, the young-old grandparents were the ones most involved in the provision of care while the old-old were least likely to be engaged in caregiving, which was associated with the presence of NCDs and a decline in functional capacities. While the policy directive of the Ministry of Health in Jamaica places value on health programmes which focuses on health promotion and prevention that impacts those who will be old soon, it requires additional monitoring and evaluation to determine its impact. Examples of this health promotion and prevention policy directive include: workplace wellness programs, physical activity programs in schools, healthy eating campaigns, exercise programs in clinics to

prevent complications of NCDs and promote control as well as the enactment of a smoking ban introduced in July 2013.

Older adults including grandparents are an invaluable resource which can significantly improve the country's level of productivity if they are effectively integrated into family networks. Specific actions are needed to facilitate them in their expanded roles of grandparenting. Additional research would be integral to: (i). gaining a better understanding of the various roles of grandparents especially by age cohorts of grandparents and grandchildren; (ii). elucidating the burden of care among grandparents with custodial vs. co-parenting responsibilities; and (iii). examining the economic value of grandparenting on the household.

References

Attar-Schwartz, S., Tan, J., & Buchanan, A. (2009). Adolescents' perspectives on relationships with grandparents: The contribution of adolescent, grandparent, and parentgrandparent relationship variables. *Children and Youth Services Review*, 1057-1066.

Bailey, W., Branche, C., & Le Franc, E. (1998). Parenting and socialisation in Caribbean family systems. *Caribbean Dialogue: A Policy Bulletin of Caribbean Affairs, 4*(1), 21-27. Retrieved from file:///C:/Users/10035202/Downloads/88-154-1-SM%20(1).pdf

Bakker, C., Elings-Pels, M., & Reis, M. (2009). *The Impact of Migration on Children in the Caribbean.* Barbados: UNICEF.

Bank of Jamaica. (2010). *Annual Average Exchange Rate.* Retrieved from Bank of Jamaica:

http://www.boj.org.jm/foreign_exchange/fx_rates_annual.php

Barrow, C. (1996). *Family in the Caribbean: Themes and Perspectives.* Kingston: Ian Randle.

Bassuk, S., Glass, T., & Berkman, L. (1999). Social disengagement and incident cognitive decline in community dwelling elderly persons. *Annals of Internal Medicine*, 165-173.

Berk, L. (2000). *Child Development (5th ed.).* Boston: Allyn and Bacon.

Berkman, L., & Syme, S. (1979). Social networks, host resistance, and mortality: A nine-year follow-up study of Alameda County residents. *American Journal of Epidemiology*, 186-204.

Brhel, R. (2013). The vital importance of the grandparent-grandchild bond. *The Attached Family*.

Brodber, E. (1975). *A study of yards in the city of Kingston.* Kingston: Institute for Social and Economic Research .

Bronfenbrenner, U. (1990). *Discovering what families do. In Rebuilding the Nest: A New Commitment to the.* Retrieved from Family Service America: http://www.montana.edu/www4h/process.html

Butts, D., & Chana, K. (2007). Intergenerational programs promote active aging. *The Journal of Active Aging*, 34-39.

Caribbean Community. (2009). Caricom Capacity Development Programme (CCDP) 2000 round of population and housing census project national census report, Jamaica. Retrieved from http://www.caricomstats.org/Files/Publications/NCR%20Reports/Jamaica.pdf

Chappell, N. L., & Cooke, H. A. (2010). Age Related Disabilities - Aging and Quality of Life. In: JH Stone, M Blouin, editors. International

Encyclopedia of Rehabilitation. Retrieved from http://cirrie.buffalo.edu/encyclopedia/en/article/189/

Christie, T. (2013). *Pension Coverage in Jamaica.* Kingston: University of the West Indies, Mona.

Creasey, G. (1993). The association between divorce and late adolescent grandchildren's relations with grandparents. *Journal of Youth and Adolescence*, 513.

Dunifon, R., & Bajracharya, A. (2012). The Role of Grandparents in the Lives of Youth. *Journal of Family Issues, 33*(9), 1168–1194. doi:10.1177/0192513X12444271

Eldemire-Shearer, D. (2008). Ageing: the response yesterday, today and tomorrow. *West Indian Medical Journal, 57*(6), 577-588. Retrieved from http://caribbean.scielo.org/pdf/wimj/v57n6/a09v57n6.pdf

Eldemire-Shearer, D., James, K., Waldron, N., & Mitchell-Fearon, K. (2012). *Older Persons in Jamaica.* Kingston: Mona Ageing and Wellness Centre. Retrieved from http://www.mona.uwi.edu/commhealth/sites/default/files/commhealth/uploads/EXECUTIVE%20SUMMARY.pdf

Fielding, J., Teutsch, S., & Breslow, L. (2010). A framework for public health in the United States. *Public Health Reviews*, 174-189.

Fogarty, K. (2007). The Protective Role of Grandparents: A Valuable Intergenerational Resource. *University of Florida's Family,Youth, and Consumer Sciences*.

Folstein, M., Folstein, S., & McHugh, P. (1975). "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, 189-198.

Geurts, T., van Tilburg, T., Poortman, A., & Dyskstra, P. (2015). Child care by grandparents: changes

between 1992 and 2006. *Ageing Society, 35*(06), 1318-1334.

Gilmour, H. (2012). Social participation and the health and well-being of Canadian seniors. *Health Reports*.

Glei, D. A., Landau D., Goldman, N., Chuang, Y., Rodriguez G & Weinstein, M. (2005). Participating in social activities helps preserve cognitive function: An analysis of a longitudinal, population-based study of the elderly. *International Journal of Epidemiology 34(4)*, 864–871. doi:doi:10.1093/ije/dyi049

Government of Jamaica, Ministry of Justice. (2005). Maintenance Act. Kingston. Retrieved from http://moj.gov.jm/sites/default/files/laws/Maintenance%20Act.pdf

Government of Jamaica. Ministry of Justice. (1957). Children (Guardianship and Custody) Act. *1991*. Kingston, Jamaica. Retrieved from http://moj.gov.jm/sites/default/files/laws/Children%20%28Guardian%20and%20Custody%29%20Act.pdf

Gray, M., Misson, S., & Hayes, A. (2005). Young children and their grandparents. *Family Matters*(72).

Gray, P., & Samms-Vaghan, M. (2009). Investigating potential hormonal associations of grandmaternal care in Jamaica. *The Internet Journal of Biological Anthropology, 4*(1).

Greenblat, E., & Ochiltree, G. (1993). *Use and choice of child care.* Melbourne: Australian Institute of Family Studies.

Grigsby, J.S. (1996). "The meaning of heterogeneity: An introduction." *The Gerontologist* 145-6.

Hammel, J., Magasi, S., Heinemann, A., Whiteneck, G., Bogner, J., & Rodreiguez, E. (2008). What does participation mean? An insider perspective from

people with disabilities. *Disability andd Rehabilitation*, 1445-1460.

Henry Lee, A., & Henry, L. (2010). *A study of the foster care programme in Jamaica.* Kingston: Office of the Children's Advocate.

Henry, M. (2013, May 26). The Cost Of Absent Fathers. *The Gleaner*. Retrieved from http://jamaica-gleaner.com/gleaner/20130526/focus/focus3.html

Hicks Patrick, J., Stella Graf, A., Nardorff, D., & Hayslip, B. (2015). Experiences with grandparents and attitudes toward custodial grandparenting. *GrandFamilies: The Contemporary Journal of Research, Practice and Policy, 2*(2), 92-109. Retrieved from http://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=1025&context=grandfamilies

Hill, K. (2011, April 10). Too many single parents. *The Gleaner*. Retrieved December 13, 2016, from http://jamaica-gleaner.com/gleaner/20110410/news/news5.html

Holt-Lunstad, J., Smith, T., & Layton, J. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Med 7(7)*. doi:e1000316. doi:10.1371/journal.pmed.1000316.

Index Mundi. (2016, December 8). *Jamaica Economy Profile 2016.* Retrieved from http://www.indexmundi.com/jamaica/economy_profile.html

Institute of Medicine. (2003). *Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century.* Washington D.C.: The National Academies Press.

Jamaica National Heritage Trust. (2016, December 9). *The people who came* . Retrieved from http://www.jnht.com/disndat_people.php

Jokhan, M. (2007). *Parental Absence as a Consequence of Migration: Exploring its Origins and Perpetuation with special reference to Trinidad.* Port of Spain. Retrieved from https://sta.uwi.edu/conferences/salises/documents/Jokhan%20M.pdf

Jones, A., Sharpe, J., & Sogren, M. (2004). Children's experiences of separation from parents as a consequence of migration. *Caribbean Journal of Social Work, 3*, 89-109.

Kang, H., & Michael, Y. L. (2013). Social integration: How is it related to self-rated health? *Advances in Aging Research, 2*, 10-20. doi:10.4236/aar.2013.21002

Katz, S., Down, T., Cash, H., & Grotz, R. (1970). Progress in the development of the index of ADL. *The Gerontologist*, 20-30.

Linton, R. (1945). *The cultural background of personality* . New York: Appleton-Century-Crofts.

Lipps, G., Lowe, G., Gibson, R., Halliday, S., Morris, A., Clarke, N., & Wilson, R. (2012). Parenting and depressive symptoms among adolescents in four Caribbean societies. *Child and Adolescent Psychiatry and Mental Health, 6*(31). doi:10.1186/1753-2000-6-31

Mahne, K., & Motel-Klingebiel, A. (2012). The importance of the grandparent role—A class specific phenomenon? *Advances in Life Course Research*, 145-155.

Mitchell-Fearon, K., Waldron, N., Laws, H., James, K., Holder-Nevins, D., Willie-Tyndale, D., & Eldemire-Shearer, D. (2015). Non-communicable diseases in an older, aging population: A developing country perspective (Jamaica). *Journal of Health Care for the Poor and Underserved*(26), 475-487.

Morris, C., James, K., & Eldemire-Shearer, D. (2010). Gender, culture, retirement and older men in

Jamaica. Findings from a study. *Cultuure, Society and Masculinity, 2*(2).

Morris, C., James, K., Laws, H., & Eldemire-Shearer, D. (2011). Health status and health-seeking behaviour of Jamaican men fifty-five years and over. *West Indian Medical Journal*, 322-329.

Muller, Z., & Litwin, H. (2011). Grandparenting and well-being: How important is grandparent-role centrality? *European Journal of Ageing*, 109-118.

Nussbaum, J., & Coupland, J. (2004). *Handbook of communication and aging research.* Mahwah, New Jersey: Lawrence Erlbaum Associates.

Ochiltree, G. (2006). The changing role of grandparents. *Australian Family Relationships Clearinghouse Briefing*(2). Retrieved from https://aifs.gov.au/cfca/sites/default/files/publication-documents/b2.pdf

Paquette, D., & Ryan, J. (2001). *Bronfenbrenner's Ecological Systems Theory.* Retrieved from http://www.floridahealth.gov/alternatesites/cms-kids/providers/early_steps/training/documents/bronfenbrenners_ecological.pdf

Planning Institute of Jamaica. (2005). *Women in Prison: The Impact of the Incarceration of Jamaican Women on themselves and their Families.* Kingston: Planninig Institute of Jamaica.

Planning Institute of Jamaica. (2016,). *Executive Summary - 2012 Jamaica Survey of Living Conditions.* Retrieved from http://www.pioj.gov.jm/Portals/0/Social_Sector/Executive%20SummaryFinal.pdf

Plaza, D. (2000). Transnational Grannies: The Changing Family Responsibilties of Elderly African Caribbean-Born women Resident in Britain. *Social Indicators Research, 51*, 75-105.

Ramocan, E.G. 2010. *Remittances to Jamaica - Findings from a national survey.* Kingston: Bank of Jamaica.

Rawlins, J. (1999). Confronting Ageing as a Caribbean Reality. *The Journal of Sociology and Social Welfare, 26*(1). Retrieved from http://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=2553&context=jssw

Robinson, A. (2016). *Jamaica.* Retrieved from http://www.oxfordaasc.com/public/samples/sample_country.jsp

Robinson, T. (2014, January 26). Single Parents. *Jamaica Observer*. Retrieved from http://www.jamaicaobserver.com/news/Single-parents_15871613

Roopnarine, J. (2004). African American and African Caribbean Fathers: Level, quality and meaning of involvement. In M. Lamb (Ed.), *The role of the father in child development* (pp. 58-97). New Jersey: John Wiley and Sons.

Roopnarine, J., Bynoe, P., & Singh, R. (2004). Factors tied to the schooling of English-speaking Caribbean immigrant in the United States. In U. Gielen, & J. Roopnarine, *Children and adolescents across cultures* (pp. 319–349). Westport, CT: Praeger.

Roopnarine, J., Bynoe, P., Singh, R., & Simon , R. (2005). Caribbean Families in English-Speaking countries: A rather complex mosaic. In J. Roopnarine, & U. Gielen (Eds.), *Families in Global Perspective.* Boston: Allyn and Bacon.

Seltzer, J. A., & Yahirun, J. J. (2013). Diversity in old age: The elderly in changing economic and family contexts. Retrieved from http://s4.ad.brown.edu/Projects/Diversity/Data/Report/report11062013.pdf

Slavkin, M., & Stright, A. (2000). Gender roles differences in college students from one- and two-parent families. *Sex Roles, 42*(1), 23-37.

Smith, D. E., & Green , K. E. (2007). Violence among youth in Jamaica: a growing public health risk and challenge. *Pan American Journal of Public Health, 22*(6), 417-424. Retrieved from http://www.scielosp.org/pdf/rpsp/v22n6/a10v22n6

Social Policy Research Centre. (2009, February). Promoting social networks for older people in community aged care. *Research to Practice Briefing 2*.

St. Bernard, G. (2003). *Major Trends affecting Families in Central America and the Caribbean.* New York: United Nations.

Statistical Institute of Jamaica.(2011). "Population and Housing Census." *Total Number of Persons Migrating to Reside Overseas during the year 2010 By Age and Sex*. Retrieved from http://statinja.gov.jm/Census/PopCensus/TotalNumberofPersonsMigratingToResideOverseasDuringTheYear2010ByAgeandSex.aspx

Statistical Institute of Jamaica. (2016, December 9). *Query 2011 Population and Housing Census.* Retrieved from http://statinja.gov.jm/Census/PopCensus/PopcensusRedatam.aspx

Steptoe, A., Shankar, A., Demakakos, P., & Wardle, J. (2013). Social isolation, loneliness, and all-cause mortality in older men and women. *Proceedings of the National Academy of Sciences of the United States of America, 110(15)*, 5797 – 5801. doi: 10.1073/pnas.1219686110

Stewart, T. (2009). *The elderly. Sixty years and beyond.* Spanish Town: Press-Box Printers.

Stinson, D. (2010). This Ain't Something You Can Pray Away: Grandparents raisinig grandchildren, a photovoice project. *Journal of Health Care for the Poor and Underserved, 21*(1), 1-25.

The Gleaner. (2009a, February 2). *Incarcerated parents bonding with children.* Retrieved from http://old.jamaica-gleaner.com/gleaner/20090202/news/news7.html

The Gleaner. (2009b, February 2). *Prisoners' children adversely affected by parents' detention.* Retrieved from http://old.jamaica-gleaner.com/gleaner/20090202/news/news6.html

Thiele, D., & Whelan, T. (2008). The relationship between grandparent satisfaction, meaning and generativity. *Int J Aging Hum Dev*, 21-48.

Thomas-Hope, E. (1992). *Explanation in Caribbean Migration: Perception and the Image: Jamaica, Barbados, St. Vincent.* Warwick: University of Warwick Press.

Thomas-Hope, E. (2002). *Caribbean migration.* Kingston: The University of the West Indies.

Thomese, F., & Liefbroer, A. (2013). Child care and child births: the role of grandparents in the Netherlands. *Journal of Marriage and Family, 75*(2), 403-421.

Timonen, V., Kamiya, Y., & Maty, S. (2011). Social Engagement of Older People. In A. e. Barrett, *Fifty Plus in Ireland 2011: First results from the Irish Longitudinal Study on Ageing (TILDA).* Dublin: TILDA.

Trading Economics. (2016, December 8). *Trading Economics.* Retrieved from http://www.tradingeconomics.com/jamaica/gdp

Tremblay, K., Barber, C., & Kubin, L. (2014). Grandparents:As Parents. Fort Collins, Colorado. Retrieved from http://extension.colostate.edu/topic-

areas/family-home-consumer/grandparents-as-parents-10-241/

UCLA. (2007). *Manual of c-survey 2.0 Software.* Los Angeles: UCLA School of Public Health .

United Nations. (2002, April 8-12). Political Declaration and Madrid International Plan of Action on Ageing. *Second World Assembly on Ageing*. Madrid: United Nations. Retrieved from http://www.un.org/en/events/pastevents/pdfs/Madrid_plan.pdf

United Nations Economic Commission for Europe. (2009). *Integration and participation of older persons in society.* Policy Brief.

United Nations, Department of Economic and Social Affairs, Population Division. (2015). *World Population Ageing 2015.* New York: United Nations. Retrieved from http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf

U.S. Census Bureau. 2015. *2014 American Community Survey. American FactFinder.* Retrieved from http://www.migrationpolicy.org/article/caribbean-immigrants-united-states.

Wilks, R., Tulloch-Reid, M., McFarlane, S., & Francis, D. (2008). Jamaica Health and Lifestyle Survey 2007-8 Technical Report. Retrieved from http://isis.uwimona.edu.jm/reports/health/JHLSII_final_may09.pdf

Williams, S., Brown , J., & Roopnarine, J. (2006). *Childrearing in the Caribbean: A literature review.*

Willie-Tyndale, D., Holder-Nevins, D., Mitchell-Fearon, K., James, K., Laws, H., Waldron, N., & Eldemire-Shearer, D. (2016). Participation in Social Activities and the Association with Socio-Demographic and Health-Related Factors among Community-

Dwelling Older Adults in Jamaica. *Journal of Cross-Cultural Gerontology*, 427-447.

World Bank. (2016, October 7). World development indicators - Health. Retrieved from http://www.google.com.jm/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_dyn_tfrt_in&idim=country:JAM:CUB:BHS&hl=en&dl=en

World Health Organization . (2015). *World report on ageing and health.* Geneva: WHO.

Zhou, J., Mao, W., Lee, Y., & Chi, I. (2016). The impact of caring for grandchildren on grandparent's physical health outcomes. The role of intergernational support. *Research on Aging*.

Zung, W. (1963). A self-rating depression scale. *Archive of General Psychiatry*, 63-70.