# The Elderly in Trinidad: Health, Social and Economic Status and Issues of Loneliness

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## ABSTRACT

**Objectives**: To determine the general health and social status of elderly persons surveyed in Trinidad and to explore issues of loneliness.

**Method**: An island-wide survey of persons aged 65 years and older was conducted in early 2002 in Trinidad. Eight hundred and forty-five (845) elderly persons were chosen using systematic random sampling. The main survey instrument for data collection was a questionnaire that included structured as well as open-ended questions. The subjects were chosen in a house-to-house survey conducted in all eight counties in Trinidad. Elderly people who were unable to comprehend the questions were excluded from the survey.

**Results**: Those selected ranged in age from 65–102 years and represented all the ethnic groups in Trinidad. These elderly persons lived in a wide range of housing situations. The majority lived in the homes of family members (57%) and 16% lived on their own. A large proportion (80%) had at least one chronic medical problem, although 44% reported their health as "fairly good" or "good". More than a half of the males (53%) and 67% of the females were taking at least one prescribed medicine. The main sources of income were old age pension (85%) and National Insurance (15%). Thirty-three per cent reported feelings of loneliness. This figure includes 28% of those who did not live alone. **Conclusion**: The data revealed that across all ethnic groups more than one-third of the sample reported themselves to be in fair to good health. Many of these elders were lonely because their relatives were quite occupied with their own affairs.

# Personas de la Tercera Edad en Trinidad: Salud, Problemas y Estatus Social y Económico, así Como Problemas de la Soledad

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#### **RESUMEN**

**Objetivos:** Determinar la salud general y el estatus social de personas de la tercera edad encuestadas en Trinidad, y explorar los problemas de la soledad.

*Método:* Se llevó a cabo una encuesta en toda la isla de Trinidad a comienzos del 2002, con personas de 65 años de edad o más. Se escogieron ochocientos cuarenta y cinco (845) personas de la tercera edad mediante un muestreo aleatorio sistemático. El instrumento principal para la recolección de datos fue un cuestionario que incluía preguntas estructuradas así como preguntas abiertas. Los sujetos fueron escogidos en una encuesta conducida casa por casa en los ocho condados de Trinidad. Los ancianos y ancianas que no podían entender las preguntas, fueron escluidos de la encuesta.

**Resultados:** Los seleccionados tenían edades entre 65-102 años, y representaban todos los grupos étnicos de Trinidad. Estas personas mayores vivían en un amplio especto de situaciones de vivienda. La mayor parte de ellos vivía en hogares de miembros de su familia (57%) y el 16% vivían solos. Un gran número de ellos (80%) tenía por lo menos un problema médico crónico, aunque el 44% reportó que su salud era "bastante buena" o "buena." Más de la mitad de los hombres (53%) y el 67% de las mujeres se encontraban tomando al menos una medicina por prescripción médica. Las principales

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fuentes de ingreso fueron las pensiones por vejez (85%) y Seguro Nacional (15%). El treinta y tres por ciento reportó sentirse solo. Esta cifra incluye el 28% de los que no vivían solos.

**Conclusión:** Los datos revelaron que en todos los grupos étnicos, más de un tercio de la muestra reportó su estado de salud entre bueno y satisfactorio. Muchas de estos ancianos y ancianas estaban solos porque sus familiares se hallaban muy ocupados con sus asuntos.

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#### **INTRODUCTION**

In Trinidad and Tobago, as is the same for most of the Caribbean, there are increasing numbers of persons living well into their senior years. Those 60 years and over, the elderly, now represent approximately 10% of the population, and the numbers are predicted to increase from 130 000 in 2004 to 260 000 by 2020 (1).

In 2000, the governmental agency with responsibility for the elderly, further to a national conference on ageing in 1999, and after discussions with various non-governmental organizations (NGOs), agreed to develop a National Policy on Ageing. The opening paragraph of the National Policy on Ageing for Trinidad and Tobago (2007) states that "The needs of older persons must be assessed against the rapid demographic changes the society is undergoing".

In the same way in which one should assess the "needs" of the elderly, one also needs to assess the health status of this population, their economic circumstances, their family situations and the level of disability which they endure. Only when these have been adequately assessed will we be able to understand fully some of those "needs" to which the policy alludes.

In the developed countries, the health and social status of the elderly has received a fair amount of attention (2). Rogers (3), with reference to the United States of America (USA), notes the importance of family living arrangements on morbidity and mortality in the elderly. Also, Newson and Schultz (4) writing with reference to social support as a mediator in the relationship between functional status and quality of life in older adults concluded that impairment was associated with fewer friendship contacts and fewer family contacts. The results of their study were consistent with the hypothesis that lower reported social support is an important reason for decreases in life satisfaction and increases in depressive symptoms found among older adult populations.

Within the Caribbean, some progress has been made in terms of the research on the elderly since Braithwaite (5) when he noted that data on the Caribbean elderly were extremely limited. In recent years, there has been an increasing interest in issues relating to the health of the elderly in the Caribbean. Eldemire (6) writing about Jamaica noted that the elderly represents 10% of the population, and that they were for the most part mentally competent and physically independent while Simeon *et al* (7) presented information on issues of physical disability and food insecurity.

Hagley and Eldemire (8) made reference to the health situation of the elderly and noted that 10.2% of the 1318 persons (aged 60–97 years) who had been interviewed for

their study, had Type II diabetes mellitus. Sue Ho (9) also writing about Jamaica and the health status of the elderly, referred to a fair level of disability. He however added that despite their disabilities, these elders served well in their households to the best of their capabilities and as such "contributed" to their families.

De Vries *et al* (9), in their study of the Elderly in the Marigot Health District in Dominica, found that most of the elderly in their survey were independent with no more than moderate limitations in activity, but noted that in the elderly over 75 years, the health status decreased considerably. They also noted a significant difference in the health status between men and women.

For Trinidad and Tobago, in relation to the elderly, there are numerous issues which are in need of research. A study of the health status of the elderly was conducted in the late 1980s in Trinidad and Tobago (11). A national representative sample of 875 persons was surveyed and the results indicated that while the majority under the age of 80 years were not in need of help with most of their daily activities, many older persons were in need of personal care assistance. Rawlins (12) addressed the issue of caregiving for the chronically ill elderly, while Camejo (13) provided valuable information about a number of issues related to the elderly. The 2005 report on Community Care (1) also provides useful information for Trinidad and Tobago, especially in the area of community homes for the elderly. This paper also makes reference to a 1991 Survey of Living Conditions of older persons. This was an initiative of the Ministry of Social Development.

While we acknowledge the increasing longevity of the Caribbean population, we note however that older years bring with them a number of medical and social problems. We are aware that elderly people in the Caribbean are known to suffer disproportionately compared to some other populations, with diabetes (14, 15) and hypertension (16). Many also have arthritis and experience many of the negative effects of the aforementioned conditions. We need to know more about the specifics of the elderly population in Trinidad and Tobago, about their health and well-being. Given the relative absence of data for Trinidad, we believe that the results from this research will be useful to health and social policy planners.

This paper seeks to explore aspects of the health status of the "elderly" and what were the main conditions for which they sought treatment. The paper explores the circumstances in which they lived, whether or not they lived alone or with family members and the nature of some of these family interactions. The paper also looks briefly at the issue of disability; the levels which were found in this population and how these elderly persons fared given their levels of disability. With reference to all the variables mentioned above, the paper seeks to determine if there were differences by gender, ethnicity, economic circumstances and general health.

# **SUBJECTS and METHODS**

Data were collected in 2002, using a cross-sectional survey. Those interviewed were men and women, living in Trinidad aged 65 years and over. A house-to-house survey was conducted based on the sampling frame of the Central Statistical Office (CSO). The number of persons selected from each county was proportionate to the population. Enumeration districts (ED) were randomly selected from each county. The number of persons selected from each district was also proportionate to its size (number of households). Using a random starting point in each selected ED, the interviewer went from house to house, until the desired number of interviews was realized. No more than one person was interviewed per household and residents of homes for the elderly were not included in the study.

The structured questionnaire used had 50 major items. These items addressed issues such demographics, self reported health status, food security, disability and loneliness. The interviewers were trained and the questionnaire was pretested. The study was approved by the Ethics Committee of the Faculty of Medical Sciences, The University of the West Indies, Trinidad and Tobago.

The sample size for the survey was based on the expected rates of disability. Luteijn (17) estimated that the prevalence of disability would be 26% of the elderly in the Marigot Health District, Dominica. With a desired precision of 3%, it was calculated that the required sample size was 855 persons. Since only categorical variables were analyzed, differences were examined using chi-square tests.

## RESULTS

A total of 1018 persons were invited to participate in the study and a total of 864 were interviewed, for a response rate of 85%. There were 463 females representing 54%. The mean age was 73 years (SD 47 years), ranging from 65 - 101 years.

### **Demographic Data**

The demographic characteristics of the sample are presented by gender in Table 1. There were no differences in age distribution by gender. Twenty per cent of the sample were 80 years and over. There were more married males and more widowed females. In terms of ethnic representation, 41% reported themselves to be of African descent and 35% as East Indian.

Where education was concerned, 78% received some primary school education. More women than men reported

Table 1: Demographics characteristic of the elderly in Trinidad by gender

	Males (n = 401)	%	Females (n = 463)	%	p-value
Age Group (years)					NS
65–69	145	36	167	36	145
70–74	89	22	116	25	
75–79	87	22	90	20	
80+	80	20	90	19	
Marital Status	00	20	20	17	< 0.0001
Single	32	8	54	12	0.0001
Married	157	39	75	16	
Common law	45	11	38	8	
Divorced	11	3	7	2	
Widowed	137	34	268	58	
Separated	19	5	21	5	
Ethnic Group					0.002
African	160	40	192	41	
East Indian	155	39	150	33	
Mixed	77	19	120	26	
Other	9	2	1	2	
Highest level of					
Education Attained					< 0.0001
None	28	7	75	16	
Primary	324	81	352	76	
Secondary	38	10	31	7	
Tertiary	8	2	3	1	
Other	3	1	1	0.2	
<b>Currently Employed</b>	13	3	8	0.2	NS
<b>Occupation Status</b>					< 0.0001
Professional	23	6	17	4	
Skilled	178	44	65	14	
Unskilled	198	49	376	81	
Never employed	2	0.58	4	1	

no schooling (16% *versus* 7%). There were more skilled males than females and of all those who were interviewed only 21 (2%) were currently employed.

#### **Health Status**

The respondents were asked to report on their health status in terms of 'very good', 'good', 'fair', 'bad' and 'very bad' (Fig. 1). Ten per cent reported their health as 'very good', 34% as

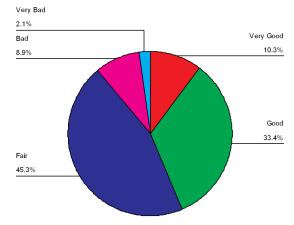


Fig. 1: Health in general is given in the following table.

'good', 45% as 'fair' and 9% as 'bad' and two per cent as 'very bad'. The differences here were statistically significant by gender (p = 0.006), with a higher percentage of males, 39%, compared to women, 29%, reporting themselves to be in good health. More women, 51%, compared to 39% of the men reported their health to be 'fair'.

## **Chronic Medical Problems**

The main chronic medical problems which were reported were arthritis (50%), hypertension (34%), diabetes (24%), heart problems (17%) and stroke (7%) (Table 2]. The

Table 2:	Health	status	bv	chronic	disease

Chronic disease					
	Ye	S	No		
	n	%	n	%	
Very Good	42	6	47	27	
Good	198	29	91	53	
Fair	36	52	30	17	
Bad	72	10	5	3	
Very Bad	18	3	0		

p < 0.001

differences were only statistically significant by gender for arthritis and hypertension (p < 0.0001), with 41% of males and 58% of females reporting a diagnosis of arthritis and 26% of males and 42% of females reporting a diagnosis of hypertension.

The data reveal that 37% (320 persons) reported one chronic disease, 23% (202 persons) reported two and 20% (169 persons) reported three or more chronic diseases. Six per cent of those with a chronic disease reported their health to be 'very good' compared with 27% for those who reported no chronic disease and 'very good' health (Table 3).

Table 3: Prevalence of chronic disease by gender

Disease	Μ		Females			
	n	%	n	%	p value	
Chronic medical problems	296	73.8	395	85.3	0.000**	
Hypertension	104	34.7	194	48.7	0.000**	
Diabetes	85	28.3	123	30.9	0.462	
Arthritis	163	54.3	269	67.6	0.000**	
Heart disease	66	22	77	19.3	0.444	
Stroke	32	10.7	24	6	0.036*	

\* Significant at 0.05 level

\*\* Significant at 0.001 level

With regard to medication, 53% of the males and 67% of the females were taking medication at the time of the survey. The differences by gender were statistically significant, p < 0.0001.

In response to the questions *Are you taking medication for illness? If yes: How many,* the data recorded that of those taking medication, 38% took one medication and 10% took as many as four different medications.

#### **Disability**

To be able to get in and out of bed by oneself or to be able to get out of a chair by oneself is a task which many elderly persons wish they could still perform. In terms of levels of disability, the following was the situation. Eighty-three per cent were able to get out of bed without difficulty, 15% with some difficulty and 2% only with help. The majority 85% were able to 'get out of a chair' without difficulty. The gender differences for those able to get out of bed without help were statistically significant, with a higher percentage of men reporting their ability to get out of bed without help, 89%, compared to 77%, p < 0.0001 (Table 4).

Table 4: Health status and ability to get out of bed

	No d	ifficulty	Difficult		
	n	%	n	%	
Very good	82	12	6	4	
Good	268	38	21	14	
Fair bad	307	43	84	55	
Bad	45	6	32	21	
Very bad	9	1	9	6	

p < 0.0001

A closer look at health status by ability to get out of bed (Table 4) and ability to get out of a chair (Table 5) reveals the

Table 5: Health status and ability to get out of a chair

	No di	ifficulty	Difficult		
	n	%	n	%	
Very good	85	12	4	3	
Good	266	37	23	17	
Fair bad	317	44	74	54	
Bad	45	6	31	23	
Very bad	14	2	4	3	

p < 0.0001

following. For those who reported their health to be 'bad', 21% had difficulty getting out of bed compared with 4% for those who reported 'very good' health. With regard to getting out of a chair, 54% of those who had difficulty, reported 'fair' health compared with 17% for those reporting 'good health'.

The majority of these older persons (94%) were able to feed themselves without difficulty. However, 45% of those, who were 'not able to feed self' reported their health as 'fair'. (Table 6). Most were able to get to the toilet by themselves (91%), and this included all who reported themselves to be in good health. However 30% of those who needed assistance in this area, reported their health as 'bad'. The differences here were not significant by gender.

# **Oral Health**

With regard to dental and oral health, the question asked was: Does your dental health or oral health prevent you from

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Feed self Use toilet No Yes Yes No % % % % n n n n Very good 88 11 1 2 89 11 0 282 35 7 13 276 35 13 17 Good Fair bad 367 45 24 45 352 45 39 50 Bad 59 7 18 34 54 7 23 30 Very bad 15 2 3 6 15 2 3 4

Table 6: Health status and ability to feed oneself and use toilet unassisted

p < 0.001

*eating your regular meals?* For the majority (64%), their dental or oral health was not reported to negatively impact on them eating their meals regularly. Three per cent stated that this was the case, "sometimes". The difference by gender was not statistically significant (Table 7).

Table 7: Oral health – prevent you from eating regular meals

	Males (n = 401)		Females (n = 463)		p value
	n	%	n	%	N/S
Often	12	3	12	3	N/S
Sometimes	128	32	155	33	N/S
Never	261	65	296	34	N/S
Any dentures/ false teeth	185	47	283	62	< .0001

As might be expected, a large per cent of this population had been fitted with dentures, this being 47% for males and 62% for females. The difference was statistically significant p < 0.0001. Twenty per cent of the males and 28% of the females had no teeth of their own. The majority, however, reported that they wore their dentures regularly, 90% for the males and 88% for the females.

## **Sources of Income**

Poverty can make the difference between a comfortable old age and one fraught with difficulties. The sources of income for this elderly group were old-age pension, private government pensions, relatives, business, savings and national insurance. Less than one per cent (0.6%) reported no income (Table 8). The main sources of income were old-age pension Table 8: Sources of Income

	Males (	(n = 401)	Females	(n	=
463)					
	n	%	n	%	
Old age pension	236	59	392	85	
Private/ government pension	145	36	54	12	
Relatives	26	7	51	11	
Business	8	2	6	1	
Savings	73	18	56	12	
National insurance	159	40	68	15	
None	4	1	3	0.6	

(85%) and the national insurance (15%); private/government pension 12%; savings 12% and relatives 11%. There were

significant gender differences with more males receiving a private or government pension, national insurance and savings while more females received old-age pensions.

# **Issues of Loneliness**

In this sample, 33% reported feelings of loneliness and 16% lived alone. This means that many (28%) who did not live alone were also lonely (Table 9). Almost one-half (49%) of

Table 9: Live alone

	Yes		Ν	No	
	n	%	n	%	
Lonely	68	49	205	28	
Not lonely	72	51	519	72	

p < 0.001

those who lived alone, reported themselves to be lonely compared with 28% of those who did not live alone. For those who reported themselves to be lonely, when asked how often they experienced this loneliness, 15% reported this to be "usually" or "always" while the others said "sometimes". The main reasons given for their loneliness were: 'family and friends too busy', 46% and 'living alone' 17%.

A total of 140 persons in this study lived alone. There were 69 males and 71 females representing 17% and 15% respectively. For those who did not live alone, they lived with spouses (32%), child's family (51%), other relatives (7.8%) and non-relatives (1.7%). The differences here for living arrangements by gender were not statistically significant except for spouse and child's family, p = 0.0001. More males (46%) versus females (21%) lived with spouse and a much higher percentage of females lived with their child's family (62%) compared to elderly men (39%).

More men than women reported 'feeling lonely'. Not only were some of these elderly persons lonely but they were additionally unhappy, in that they ate alone (Table 10). Of

Table 10: Eat alone

	Usually			Somet	Never	
	n	%	n	%	n	%
Lonely	135	44	127	26	11	15
Not lonely	170	56	355	74	65	85

p < 0.001

those who usually ate alone, 44% reported feelings of loneliness compared with 26% for those who 'ate alone sometimes'. For those who never ate alone, 85% reported themselves as not having experienced feelings of loneliness. More than a third of the sample (35%) reported that they usually or always 'ate alone'. The differences were not significant by gender.

# DISCUSSION

Although we acknowledge that the United Nations defines the elderly as those 60 years and older, for this piece of research, we interviewed persons age 65 years and older. We used 65 years in this instance, as we wish to compare our work with a growing number of researchers who used persons age 65 years and older as their elderly cohort. These would include researchers such as: Manton and Gu (18), Newsom and Schultz (19), Johnson (20) and Chou and Chi (21).

The results of our survey suggest that the majority of those sampled reported themselves to be experiencing fair to good health, with seven per cent reporting bad or very bad health. These results compare very favourably with results coming out of Jamaica (17) and Dominica (18).

Although large numbers had no teeth of their own, the majority had dentures and used them frequently, which perhaps explain their "fair" to "good health", in that they still had the ability to chew.

Chronic diseases were prevalent in this sample with 80% reporting at least one chronic disease. The main chronic problems reported were arthritis, hypertension and diabetes. This is in keeping with research done elsewhere in the Caribbean for this age group (22–25).

Disability is defined by Helman (26) as "the many social and other disadvantages imposed on people with physical impairment". He makes the distinction between a disability and an impairment; the impairment being defined as "a body lacking part or all of a limb or having a defective limb or some other bodily mechanism." It goes without saying that any level of disability will impact upon the wellbeing of the elderly and reduce their independence.

Although this sample addresses the issue of ageing for the 65years and over age group, the levels of disability were reasonable for this age group with 83% still being able to get out of bed without difficulty and 85% being able to get out of a chair without difficulty. The differences were statistically significant by gender with a higher percentage of men (89%) compared with 77% of women being able to get out of bed without assistance. It is important to note that there were more older women than older men and that life expectancy for women is higher than for men. More of the oldest people in this sample were women, and the inability to get out of bed or out of a chair was not sufficient, to cause some of these persons to see their health as anything less than 'good'.

The most worrying issues for this sample were the issues of sources of income and the issues of loneliness. Many older people worry a great deal about their source(s) of income. Some have good reason to worry, given frequent increases in the cost of living. The main source of income for this group was old-age pension (85%). Although this pension was increased in 2005 to J\$1150.00 per month, an increase of \$150 over the previous year, this for some older persons was not adequate to their needs especially if they did not own their own home or have the benefit of the cushioning of an

extended family home situation. Consequently, the issues of old-age pension continues to be a contentious one as we see in Cloos (27) and Rawlins (28), where they show case studies of older persons requesting a significant increase in the old age pension.

Loneliness was another troubling concern for this group with 33% reporting feelings of loneliness. When this loneliness is viewed against a background of gender and ethnicity, men reported a higher percentage for those who were 'usually' or 'always' feeling lonely. This is perhaps not so unexpected given the context of the Caribbean where some men do not spend sufficient time over the lifetime with family members, do not get close to family members over the years and in old age find themselves outside the tight circle of family-togetherness (21).

The loneliness issue was problematic for all who made mention of it and "eating alone" was for some "like punishment". A full third of the sample (35%) almost always 'ate alone'. These old people ended up being lonely, essentially because their relatives were reported to be uncaring or did not have time for them.

The issue of loneliness in the elderly draws attention to the changing nature of the society, where many people are too busy to give time to the elderly. It also draws attention to the reality that large numbers of women who would, in times past, have had time to spend with the elderly, are in paid employment, away from the home.

The findings of the study suggest that if family members are to spend time with the elderly, a number of adjustments need to be made. Family, who can afford to, should be encouraged to pay for carers/companions for the elderly. Intergeneration communication should be encouraged so that children and young people residing in the same place as elders should spend more time with them. The establishment of institutions, subsidized by the government for lonely elderly persons who are still reasonably independent should be considered. Day-care for the elderly, a place where elderly people can be in the days, meeting and interacting, would be a good idea to reduce this scourge of loneliness.

This study provides very valuable information, which if used by decision-makers, could be beneficial, for planning programmes which could alleviate loneliness in the elderly and in so doing reduce stressful situations for the elderly and their relatives. This research also provides good information on health status, which can help planners to specifically and adequately address the health needs of this age group.

## REFERENCES

- Edwards J. Community Care Development Programme, Care Facility/ Provider Assessment, Children and Elderly, Draft Final Report, Ministry of Social Development, Trinidad 2005.
- 2. United Nations. The World Ageing Situation 1991; Center for Social Development and Humanitarian Affairs.
- Rogers RG. The effects of family composition, health and social support linkage on mortality. J. Health and Soc. Behaviour December 1996; 37: 326–8.

- Newsom JJ and Schultz RC. Social Support as a mediator in the relation between functional status and quality of life in older adults. Psychological Ageing 1996; 34–44.
- Braithwaite; Farley S. The elderly in Barbados: problems and policies 1990. Bull Pan Am Health Org. 24: 314–29.
- Eldemire D. An Epidemiological Study of the Jamaican Elderly. PhD Thesis. The University of the West Indies, Jamaica, 1993.
- Simeon DT, Ramdath DD, Chadee DD, Rawlins JM. Physical disability, Food Insecurity and Nutritional Status of Non-Institutionalized Persons age 65 Years and Over in Trinidad. Unpublished Final Report, Caribbean Health Research Council. Trinidad, 2005.
- Hagley K and Eldemire D. Diabetes mellitus in the Jamaican elderly. West Indian Med J, 1996; 45: 82–4.
- Sue Ho R. The health status of the elderly in two adjacent inner city communities in the parish of St. Andrew, Jamaica. Submitted to UWI, Mona for MPH, October 1997.
- de Vries NR; Luyeijn A J; Nasiiro RS; Mayboom de Jong B. Health status of the elderly in Marigot health district, Dominica. West Indian Med J June 1999; 48: 73–8.
- PAHO. A profile of the elderly in Trinidad and Tobago. PAHO Technical Paper No. 22 1989. Pan Am Health Org: Washington D.C.
- 12 Rawlins J. Caring for the chronically ill elderly in Trinidad", West Indian Med J 2001; 50: 13–6.
- 13 Camejo, Acton. The Elderly in Trinidad and Tobago, Monograph. Ministry of Social Development, 1999.
- Morrison E. Diabetes Mellitus The Ravages. In Morgan O. Ed. Health Issues in the Caribbean, 2005; pp.122–4. Ian Randle, Jamaica.
- Barcelo; Aedo C; Rajpathak S and Robles S. The cost of Diabetes in Latin America and the Caribbean. Bulletin of the World Health Organization 2003; 81
- Wilks M. Hypertension –Burden and Risks. In Morgan O. Ed. 2005. Health Issues in the Caribbean pp.122-124. Ian Randle, Jamaica.
- Luteijn B. Health Status of the Elderly in theMarigot Health District, Dominica. West Indian Med J 1996 45 (Suppl.2): 31.

- Manton KG, Gu X. "From the Cover: Changes in the Prevalence of Chronic Disability in the United States, black and non black populations above 65 years from 1982–1999. Proc Natl Acad Sci. USA 2001, 98: 6354–9.
- Newsom JJ and Schultz RC. Social Support as a mediator in the relation between functional status and quality of life in older adults. Psychological Ageing 1996; 34–44.
- Johnson, JE (1996). Social Support and Physical Health in the Rural Elderly. Applied Nursing Research, Vol. 9.2. (May): 61–6.
- Chou KL and Chi I (2001). "Social Support exchange among elderly Chinese people and their families in Hong Kong: a longitudinal study. Int J Ageing Hum Deve 2001; 53: 329–46.
- Eldemire D. Ageing the Reality. Chapter 2. In Morgan, Owen, Health Issues in the Caribbean. UWI Press, Jamaica 2005; pp.157–77.
- de Vries NR; Luteijn A J; Nasiiro RS; Mayboom de Jong, B. Health Status of the elderly in Marigot health district Dominica. West Indian Medical Journal April 1996; 45 (Suppl. 2): 31.
- Barker H. The Health, Socio-Economic, Family Situation and Lifestyle of Older Adults in St Vincent and the Grenadines 1995. Monograph. HelpAge International, St Michael, Barbados.
- Alberts JF; Koopmans POC; Gerstenbluth I; Van der Heuvel WJA. The health profile of Curacao: results from the Curacao health study. Abstract. West Indian Med J 1995; 44 (Suppl. 2): 21–2.
- Helman, CG Culture, Health and Illness (2002) Fourth Edition, Arnold, London.
- Cloos, Patrick (2008) "The Caribbean Ageing Study: Focus Group Discussions, 2007–8. Paper presented at the CHRC sponsored Workshop, ECLAC, Trinidad, April, 2008.
- Rawlins J. (2008). Daily Living, Financial Insecurity and Health: The Case of Older Women in Trinidad and Tobago. Paper presented in the Lunch-time Seminar Series, Centre for Gender and Development Studies, UWI, Trinidad, 8<sup>th</sup> October, 2008.