SOCIO-ECONOMIC IMPACT OF SOCIAL TIES ON COMMUNITY CARE FOR OLDER AUSTRALIANS

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Abstract:

Mounting pressure on government expenditure, from the needs of an ageing population, has led to the introduction of the Home and Community Care (HACC) programme, based upon the self-reliance principle. This programme may, however, disadvantage certain groups, as its success depends, in part on the informal support from family and friends.

It is essential, therefore that we examine older Australians individual characteristics to help explain the levels of informal care and support presently available, as represented by the social network.

Using a regression analysis of the information collected from 401 non-institutionalised older Gold Coast residents sampled in a household survey conducted in 1999, we test two hypotheses:
1. *gender, education and household type explain levels of social network accessed by older people;*
2. *older males are more vulnerable than older females to the social network effect of living alone.*

Based on the findings of our study, we have concerns about the accessibility of the informal care and support (from family and friends) available for older men living alone as the level of the social network was the lowest for this group of older Australians.

1   INTRODUCTION

This paper examines the implications of the Australian government's Home and Community Care (HACC) programme for older Australians in relation to adequate informal care and support. The purpose of this work is to extend previous research by investigating individual characteristics that explain older people's level of informal support, as represented by the social network, and the identification of groups vulnerable to inadequate informal care. The analysis is based on this study's household survey consisting of a sample of 401 non-institutionalised men (N=197) and women (N=204) aged 65 and over, residing in the Gold Coast City, in 1999. Using regression analysis we test: 1. the significance of individual variables (gender, education and household type) in explaining levels of social network; and 2. that older males are more vulnerable than older females to the social network effect of living alone.

1.1   The Significance and Contribution of the Study

Since the mid-1980s the mounting pressure on government expenditure, contributed to by an ageing population[1], had led to the strengthening of the government's commitment to the principle of self-reliance. This principle implies that the accessibility of care resources for older people is increasingly the responsibility of the individual (Millward 1998). Given this, knowledge of individual characteristics that explain social network will provide us with a better understanding of the circumstances facing older people.

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[1] The Australian population has become increasingly top heavy at the upper end of the age spectrum with those aged 65 and over the fastest growing age-group. The proportion of this age cohort rose from 8.5% in 1966 to 12% in 1996 (ABS 1986 and 1996). Australia is also supporting a rising number of the 'old' old (aged 80 and over). Over the next three decades the population of people aged 80 and over is expected to increase by more than 200% (Productivity Commission 2000).

The principle of self-reliance prevailing in recent Australian government policies[2] is reflected in the government's encouragement of the Home and Community Care (HACC) programme. Services provided through this programme play an increasingly critical role in the health maintenance of an ageing population. Indeed it represents an important complementary component to the health system (COTA 2000a). About 20% of Australians over the age of seventy years use aged care services. HACC services support more than half of this group (COTA 2000a). Among those 65 to 79 years, 54% of female HACC clients in 1997 lived alone compared to 37% of their male counterparts. Among those aged 80 years and over living alone the proportion of HACC clients rose to 65% for women and 43% for men (AIHW 1999).

The success of the HACC programme is partly dependent upon unpaid care from family and friends (Kendig, McVicar and Reynolds 1992; Beilhorz, Considine and Watts 1992; Office of the Ageing 1994; Courtney Minichiello Wait 1997; Victorian Parliament 1997). According to Arber and Ginn (1991) it is well accepted that older people living alone have less access to unpaid care. The rising trend in the number of single-person households among older Australians, an increase of 24% since 1971 (ABS1996), raises concerns of the need for more resources to satisfy the growing demand for care within these households[3]. The Commonwealth Department of Health and Family Services (1998) acknowledges that "the present range of facilities is limited". Since single older males possess the weakest social network (Millward 1999; Lee Willetts Seccombe 1998; Avlund Damsgaard and Holstein

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[2] Such as compulsory superannuation, HACC (Home and Community Care) and private health insurance.
[3] Telephone interview transcript (21/08/01):
Department of Health and Aged (Queensland branch): *"The number of subsidised care hours and services is determined by the Aged Care Assessment Team (ACAT)"*.
Author: *"May I have a copy of the list of criteria that determines older people's eligibility for government subsidised community care services?"*
Department of Health and Aged: *"We have a criteria sheet but ultimately eligibility is left to the discretion of the ACAT"*.
Author: *"So if resources are limited do ACAT attempt to spread these resources thinly across their clients and is this reflected in their discretionary assessment?"*

1998), they may face a poorer level of care compared to others under such programmes.

The Gold Coast City, characterised by its high proportion of older people - 17% of the total Gold Coast population, far exceeds the Australian average (12.1%) (ABS 1998). Additionally the area possesses one of the fastest growing older populations and continues to remain a popular retirement location. This increase in geographically dispersed families, due to retirement, may preclude adult children from providing day-to-day practical and personal care to older people (Arber and Ginn 1991). An investigation of the Gold Coast aged by this study is therefore, most timely.

1.2   Organisation of the Paper

Section 2 is a literature review of the determinants of individual characteristics in establishing social networks. This is followed by an overview of the Australian HACC programme in Section 3. Section 4 outlines the conceptual framework in which the two hypotheses are posited, and is followed by an explanation of the research method in Section 5. Section 6 presents the models for testing the determinants of informal care and the social network effect of living alone. The descriptive and analytical statistics in Sections 7 and 8, respectively, outline the research results. The conclusions of this study are detailed in Section 9.

2   GENESIS OF THE STUDY

It is widely recognised that social relationships have a powerful effect on physical health (Berkman et al 2000). Throughout the 1970s and 1980s a series of studies consistently showed that the lack of social ties or social networks predicted mortality from almost every

Department of Health and Aged: *"Possibly.... Who is this?"*

cause of death (Cohen 1988; House, Landis and Umberson 1988; Berkman 1995).

Durkheim provides a fundamental theory for the empirical investigation of social relationships and their influence on health. His most important contribution was to understand how social integration and cohesion influence mortality. In *Suicide*, Durkheim shows how 'social facts' can be used to explain changing patterns of aggregate tendency toward suicide. Durkheim's theories easily extend to health outcomes such as cardiovascular disease (Berkman et al 2000).

The literature suggests that older women have stronger social networks than older men (Hessler et al 1995; Antonucci 1994; Lee Willetts Seccombe 1998; Avlund, Damsgaard and Holstein 1998; Millward 1998, 1999). Indeed women are more likely to be in contact with family and friends and are more likely to initiate social contact than men (ABS 1995)[4]. Studies report that while divorce and widowhood tends to weaken relationships between older men and their children, relationships between divorced or widowed older women and their children continue to remain robust (Lee, Willetts and Seccombe 1998; Millward 1998). Generally married men depend on their wives to maintain their social contacts (Sax 1993), while widowed men appear to have more difficulty developing social networks after the death of their wives (Lee, Willetts and Seccombe 1998; Keith 1986). This then places men at a greater risk of social isolation than women (House, Landis and Umberson 1989; Arber and Ginn 1991). The strong evidence of older men's weaker social network could, in part, be reflected in the suicide rates among older Australian males which are five times greater than that of older women (Goldney and Harrison 1998).

3 FROM INSTITUTIONAL CARE TO COMMUNITY CARE

In line with the federal government's push towards self-reliance, the HACC programme, introduced in 1985, changed the focus of care to a coordinated set of services. Such changes were made to help satisfy the assessed needs of disabled individuals, including the frail elderly, by providing care within their home rather than in institutions. Jointly funded by the Commonwealth and State governments, HACC includes meals on wheels, paramedical and home nursing services, respite care, transport, housekeeping and other domestic assistance services (Schulz, Borowski and Crown 1991; Courtney Minichiello and Waite 1997). The cost effectiveness of community care services in comparison to institutionalised care was motivated the government towards this policy direction[5] (Onyx, Benton and Bradfield 1991).

Including state government spending, community care funding has increased to about 21% of nursing home expenditure in Australia (Courtney Minichiello and Waite 1997). In comparing 1988 and 1993 data Table 1 highlights the steady decline in health establishments for the severely handicapped aged, and shows the increased contributions made to this area from private households

Table 1: **Type of Residence, Older People (Aged 65 and Over) with Profound or Severe Handicap by Gender in Australia, 1988 and 1993 (Percent)**

	Location	Private households (%)	Health establishments (%)	Total (N)
1988	**Older Males**	72.98	27.02	99100
	Older Females	62.8	37.2	231700
	Total Older Persons	65.8	34.2	330800
1993	**Older Males**	74.6	25.4	113200
	Older Females	70.3	29.7	250000
	Total Older Persons	71.6	28.4	363200

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[4] A 1995 ABS family survey from a sample of older Australian's found that single older men spent an average 90% of each week alone compared to women in the same situation who spent only about a third of their time alone.

[5] Community care in the 1990s has relieved the government of the burden of subsidising for the construction and maintenance of nursing homes, hostels and self contained units for the aged. Many services are provided voluntarily by family and friends (Beilhorz Considine Watts 1992).

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Source: Calculated from Australian Institute of Health and Welfare and the Office for the Aged 1997 section 19

Undoubtedly Home and Community Care rather than institutionalised care, is the preferred option for most frail aged and their families, and this has contributed towards the rise in single-person households among older people. Table 2 outlines the changes in living arrangements among older people since 1971. Single-person households have steadily increased over this time to 24% of the older Australian population in 1996 (ABS1996). Between 1971 and 1996 the proportion of males living alone increased by 33%, from 12% to 16% of the older male population. During this time, the proportion of women living alone increased by 31%, from 26% to 34% of the older female population. Conversely the proportion of the aged in non-private dwellings decreased after the introduction of community care in 1985.

Table 2: Living Arrangements of Those Aged 65 and Over by Gender in Australia in Selected Years

Living Arrangements		Private Dwellings					Non-private dwellings	
		With spouse	With other family	Alone	Others (a)	Campers/ caravan/ migratory (b)		Total (N) '000
% of Older Men	1971	43.97	24.89	12.21	10.42	0.6	7.91	446.9
	1976	49.93	22.11	14.33	4.92	1.12	7.58	507
	1981	51.52	20.36	14.69	4.33	1.48	7.62	601.1
	1986	53.86	21.69	13.92	2.72	0.12	7.69	693.3
	1991	51.64	17.68	14.81	8.23	NA	7.64	816.2
	1996	52.58	16.67	16.14	7.59	NA	7.02	938.5
% of Older Women	1971	22.94	29.72	25.77	11.47	0.29	9.81	618.1
	1976	26.27	25.66	32.2	4.73	0.53	10.63	701.9
	1981	28.15	23.05	32.99	3.87	0.71	11.23	828.3
	1986	30.2	24.11	30.97	2.59	0.08	12.05	953.4
	1991	30.29	18.62	32.01	7.32	NA	11.76	1091
	1996	31.67	17.44	33.56	6.66	NA	10.66	1227

Source: Calculated from unpublished ABS data 1971-96
(a)   Includes group households, visitors and others not classifiable plus Aboriginal missions and settlements before 1991
(b)   Not recorded as a separate category since 1991 census

4   SOCIAL NETWORK STATUS OF OLDER PEOPLE

For the purposes of this paper social network is indicated by frequency of contact with family and friends[6]. This paper postulates that the most important individual characteristics in accessing levels of social networks are *gender, education and household type*. Extending the life course theory by linking Durkheim's concepts, this paper explains how the level of social network is a function of an individual's ability to socially integrate over time. Government, corporate and family institutions have assisted in the creation of roles that have contributed to differentials in the development of social skills and to the support that determines social network. This study seeks to extend the understanding of the significance of gender, education and household type in determining care resources among the Gold Coast older population.

The first research question therefore becomes:

Are gender, education and household type significant determinants of the frequency of contact with friends and family among older people on the Gold Coast?

Past research has shown that the social network impact of living alone is greater among men than women. This finding has led to the speculation that men posses a deficit in social networking that renders them disadvantaged in receiving adequate informal care and support when living alone.

The second research question then becomes:

Are older males more vulnerable than older females to the social network effects of living

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[6] Although the influence of family ties among the aged is well documented, friendships have received little attention from researchers (Arber and Ginn 1991). Friends often provide the primary and most enduring link with society as well as the main source of emotional support and help in coping with the loss of previous roles (Atchley 1980:364 cited in Arber and

alone?

5   RESEARCH METHOD

The lack of information available on the relevant social indicators made it necessary for this study to conduct a household survey in 1999 of the non institutionalised aged in the 10 statistical areas with the highest median age in the City of Gold Coast (Statistical Subdivision)[7].

The household survey questions were influenced by the outcomes of key informant interviews with persons providing services for the elderly on the Gold Coast within the following organizations: 60 and Better, Home and Community Care (HACC), Blue Nursing, St Vincent's Community Services, Fast Track and the Gold Coast City Council.

Because of the influx of retirees to the area, the key informants were able to assist in identifying issues specific to the Gold Coast, such as length of residency and accommodation type. These issues have not been considered in previous economic studies.

The data collected from the two pilot studies enabled the refinement of the survey instrument and improved its robustness. This involved compiling a frequency matrix to identify consistent responses, a missing response report to identify misunderstood, inappropriate questions, and bivariate correlation to assist in the greater dispersion of the questions.

After the deletion of several questions and the refinement of others, the total number of

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Ginn 1991 p164). The key informants have highlighted the greater reliance on friends compared to family among the Gold Coast older population.

[7] Bilinga, Broadbeach Waters, Burleigh Heads, Burleigh Waters, Coolangatta, Hollywell, Palm Beach, Paradise Point,

survey questions was reduced from 41 to 29. The implementation of the refined household survey using the postal method increased the response rate of the household survey from 33.3% (pilot studies conducted in 1998) to 45.4%. The 401 usable questionnaires obtained in the survey exceeded the minimum required sample size of 287[8]. The total number of respondents represented 0.8% of the Gold Coast's total 49,235 aged population.

After completion of the survey, the data was screened for validity and reliability using the SPSS statistical package. This involved an examination of the survey data for plausibility, missing data, outliers, normality, linearity, homoscedasticity and mutlicollinearity. After vigorous screening of the data, Box's Test confirmed the homogeneity of variances. The Spearman correlation (nonparametric) statistics reported no bivariate correlations greater than 0.7 (Tabachnick and Fidell, 1989). The absence of multicollinearity produced no biased coefficients for the explanatory variables.

A comparison of characteristics of the surveyed households with ABS local area statistics (1996) revealed that the household sample was highly representative of the Gold Coast's older population.

Runaway Bay, Tugun

[8] We computed the minimum sample size required from a known universe (Clover and Balsley 1984: 251) by testing the significance of a difference between the sample proportion (household survey) and the universe proportion (taken from the ABS census).

$$n = (pq)/((p-P)/z)^2 + (pq)/N$$

where:
- n = size of the sample
- N = 49235 (known universe size)
- $p-P$ = 0.05 (allowed deviation of the sample proportion from the universe proportion)
- p = 0.75 (the largest estimated proportion expected for any of the characteristics covered by questions on the questionnaire)
- q = 1-p (= 0.25)
- z = 1.96 (the 0.05 level of reliability desired, in standard normal deviations)

$$n = 0.1875/(0.0255)^2 + 0.1875/49235 = 287$$

The 401 usable questionnaires obtained in the survey exceeded the minimum required sample size of 287. All 401 were used since more observations improve the reliability level required (Clover and Balsley 1984).

6   THE REGRESSION MODELS

6.1   The Significance of Gender, Education and Household Type

To test the significance of gender, education and household type for each indicator of social network (frequency of contact with friends, frequency of contact with family) two ordinal regression models were run. Since each social network indicator is ordinally scaled[9] the generalised linear model is used to predict cumulative probabilities for the categories[10]. Age, dependence level and government pension were the control variables.

The model is:

$$Y_{ij} = \beta_{0j} + \beta_1\, G_i + \beta_2\, E_i + \beta_3\, A_i + \beta_4\, HHT_i + \beta_5\, P_i + \beta_6\, D_i + \varepsilon_i, \; j = 1,2,3,4,5\text{-}1 \qquad (1)$$

where

Y is the cumulative probability[11] of a measure of social network for indicator i (either the level of frequency of contact with friends or the level of frequency of contact with family) for the jth category[12]

where

G =   1 if male; 0 if female.

E =   1 if junior[13]; 0 if other.

A =   Continuous variable from 65 years of age.

HHT =   1 if couple household; 0 if single-person household.

P =   1 if receives a full government pension; 0 if other.

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[9] The survey responses for the frequency of contact with friends and the frequency of contact with family are ordinally scaled from one (1) through five (5): Never/hardly ever (1), Less than monthly (2), Monthly (3), Weekly (4), Daily (5).

[10] When predicting ordinal responses, the usual linear regression models do not work well. Those methods can work only by assuming that the dependent variable is measured on an interval scale. Because this is not true for each social network indicator, the simplifying assumptions on which linear regression relies are not satisfied (SPSS 1999).

[11] The link function is a transformation of the cumulative probabilities that allows estimation of the model. Five link functions are available in the ordinal regression procedure. The link function was chosen based on: the investigation of the distribution of values for the outcome variable; the evaluation of the model fitting information of several link functions; and the evaluation of the Pseudo - R^2 measure of several link functions (SPSS 1999).

[12] Each equation gives a predicted probability of being in the corresponding category or any lower category.

[13] Primary or less and Junior secondary were collapsed to represent Junior education.

D =   1 if full independent living; 0 if dependent on others

This regression analysis also includes factors specific to the Gold Coast region (residency status and accommodation type) to determine their significance as explanations for variations in the level of social network. To analyse the social network indicators of friendship ties and family ties the model adds:

Accom =   1 if living in a detached house; 0 if other

Resid =   1 if residing on the Gold Coast for more than 10 years;

               0 if less than 10 years

6.2 The Social Network Effect of Living Alone

To investigate observed gender differences, an interactive model (moderated regression analysis with a dummy variable) determined the difference between the household type coefficients of male and female samples. The model identified the source of this difference, whether it occurred at their intercept values or slope values or both[14]. Age, education, government pension, dependence level are the control variables.

The model is:

$$Y_{ij} = \beta_{0j} + \beta_1 G_i + \beta_2 HHT_i + \beta_3 (G.HHT_i) + \beta_4 A_i + \beta_5 E_i + \beta_6 P_i + \beta_7 D_i + \varepsilon_i, \qquad (2)$$

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[14] Analysis can reveal one of 4 possibilities. That:
Male and female regressions are identical i. e. coincident regression
Male and female regressions differ only in their intercept i. e. parallel regression.
Male and female regressions have the same intercept but different slope i. e. concurrent regression.
Male and female regressions have the different intercepts and different slope i. e. dissimilar regression (Gujarati 1999).

Table 3 Statistical Characteristics of the Household Survey Sample by Gender and Household 1999

Definition of variables and unit of measurement	Lone Households		Couple Households	
	Male	**Female**	**Male**	**Female**
Friendship ties (% within household and gender)				
Never/hardly ever	12.2	5.6	6.7	11.8
Less than once a month	4.9	2.2	4	5.5
Once a month	4.9	15.6	20	17.3
Weekly	48.8	57.8	50.7	45.5
daily	29.3	18.9	18.7	20
	100%	100%	100%	100%
Family ties (% within household and gender)				
Never/hardly ever	26.8	17	9.9	10.2
Less than once a month	24.4	13.6	17.9	21.3
Once a month	26.8	29.5	29.1	27.8
Weekly	17.1	29.5	31.8	28.7
daily	4.9	10.2	11.3	12
	100%	100%	100%	100%
Highest Educational level[15](% within household & gender)	17.9	26.4	17.8	23.4
Primary or less	28.2	26.4	25.7	36.4
Junior secondary	25.6	29.9	27.6	28
Senior secondary	12.8	6.9	13.2	8.4
Certificate/diploma	15.4	10.3	15.8	3.7
Tertiary or higher	100%	100%	100%	100%
Residency status (% within household and gender)				
Lived in the Gold Coast 10 years or more	52.5	71.9	76.6	73.6
Less than 10 years	47.5	28.1	23.4	26.4
	100%	100%	100%	100%
Accommodation type (% within household and gender)				
Caravan park	17.1	8.8	7.7	10.6
House	26.8	33	46.2	50.4
Unit/flat	51.2	52.7	34	27.4
High rise	4.9	5.5	12.2	11.5
	100%	100%	100%	100%
Drive (% within household and gender)				
No	12.2	50.5	11.7	40.2
Yes	87.8	49.5	88.3	59.8
	100%	100%	100%	100%
Health (% within household and gender)				
Dependent on others	20	20.2	23.7	22.4
Independent living	80	79.8	76.3	77.6
	100%	100%	100%	100%
Main Source of Income (% within household and gender)				
Full government pension	51.2	63.2	38.7	41.8
Part government pension	29.3	20.7	33.5	35.5
Self funded	19.5	16.1	27.7	22.7
	100%	100%	100%	100%
Household type (% within gender)	20.8	44.6	79.2	55.4

Source: Household Survey 1998-1999

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[15] The pattern of schooling was much the same in each state in the 1960s. For the most part a one year kindergarten preceded six or seven years of secondary schooling. In 1960 the principal exception was Queensland which had an eight year primary school leading to a State Scholarship examination. Queensland's Scholarship examination was discontinued after 1962.

7 DESCRIPTIVE STATISTICS

Table 3 documents the characteristics of the survey respondents by gender and household type. The descriptive statistics of this survey reveal that the respondents are in good health, with between 76% to 80% reporting full physical independence. All subgroups showed strong friendship ties, viz. the majority meeting friends either on a weekly or daily basis. However while single women (69.2%) and couples (males 72.2% and females 68.5%) meet with family members at least once a month a smaller proportion of single men (48.8%) meet with family members over the same period. With only 53% of single males residing on the Gold Coast for 10 years or more compared to 72% of single females, the lower residency status of males suggests that they may be confronted with greater social isolation and less informal support compared.

Further evidence of a weaker social network among single males is documented in Table 4. It includes single males reporting: higher levels of distress at relocating to the

Table 4. Issues that Have Caused Significant Hardship or Worries for Gold Coast Older Residents, 1999

Hardships/worries	Couple Household (%)			Single-person Household (%)		
	Male	Female	Total	Male	Female	Total
Loss of close ones	9.7	8.8	9.3	41.5	38.9	39.7
Little family/friends nearby	7.7	9.6	8.6	17.1	13.3	14.5
Separation/divorce	0.6	1.8	1.1	17.1	4.4	8.4
Relocating	3.9	7	5.2	9.8	4.4	6.1
Loneliness	1.3	5.3	3	29.3	17.8	21.4

Source: Gold Coast Household Survey 1999

Gold Coast (10% of the total single males compared to 4% couple males, 7% couple females and 4% single females); and nearly 30% of single males admit to experiencing loneliness compared with single females (18%). A greater proportion of both single males (17%) and single females (13%) report that having very few, or no, relatives or friends living nearby

causes hardship, compared to a smaller number of men (7.7%) and women (9.6%) from couple households. A relatively large proportion of single males also report separation or divorce as a cause of hardship (17%). This supports the literature that single males do in fact face greater social isolation (Millward 1996; Lee Willetts Seccombe 1998; Barber 1994).

Further deficits in access to informal support by single person households are evidenced in a greater proportion of single-person households deferring elective surgery (7% for single-person households, compared to 2% for couple households). Indeed several older women spoke of the frustration of deferring elective surgery because they did not have access to post operative home care. This issue of care is more dramatic among single males with an astonishing 41% stating that they would move from the Gold Coast if ill/disabled compared to 24% of single females. This reflects the poorer level of informal care available to single males in the area and the fear that this isolation can engender.

8　　RESULTS FROM TESTING THE HYPOTHESES

8.1 The Significance of Gender, Education and Household Type

Table 5 presents the estimated coefficients (with Wald-statistics in parentheses) for the two model specifications[16] (friendship ties, family ties) of the total sample of 401 older men and women. The regression analysis for the model "friendship ties" reveals that residency status explains the frequency of contact with friends. Those living on the Gold Coast for 10 or more years are more likely to meet and socialise with friends than those residing on the Coast for less than 10 years.

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[16] The significant chi-square statistic indicates that the model gives a significant improvement over the baseline intercept-only model, that is, the model gives better predictions than if we guessed based on the marginal probabilities for the outcome categories.

Table 5. Regression Analysis of the Total Sample Explaining Social Network, Model 1[17]

	Estimate (Wald-statistics)	
	Friendship ties	**Family ties**
Gender (Male)	.232 (1.288)	-.006 (.099)
Education (Junior)	-.167 (.677)	.416 (4.558)*
Age	.0002 (.019)	-.0002 (.032)
Household type (couple)	-.308 (1.862)	.471 (4.723)*
Government Pension	-.005 (.068)	.203 (1.043)
Dependence (full independent living)	.744 (8.986)**	-.006 (.087)
Residency status (10+ years)	.722 (10.157)**	.007 (.117)
Accommodation type (house)	-.219 (1.104)	.290 (2.129)
R^2	.067	.044
χ^2	23.589**	15.837 *

Source: Household Survey 1999 * Significant at 0.05 level (two-tailed).   **Significant at 0.01 level (two-tailed)

The analysis of the "family ties" model reveals that education and household type explain the frequency of contact with family. Those living alone and those who are better educated are likely to meet family less often. The estimated odds that a single older person's response is in the direction of less frequency of contact with family ($Y \le j$ rather than $Y > j$) is equal to 1.6times the estimated odds for couples[18].

8.2   The Social Network Effect of Living Alone

Table 6 presents the results for the interactive model. Both the "friendship ties" and the "family ties" models are statistically reliable ($\chi^2 = 23.726$, p<.01; $\chi^2 = 19.359$, p<.01; respectively). In the "family ties" model the differential intercept coefficient β_1 is statistically significant, indicating a difference between the expected values of frequency of contact with family for males and females.

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[17] The threshold parameters are not important from a theoretical standpoint (SPSS1999) and have therefore been omitted from the table.

[18] Since the logistic link function was chosen the interpretation of the estimate as an odds ratio can be made (SPSS 2001). In this case we convert the household type estimate (.471) in the family model 1, that is, $e^{.471}$

Table 6. Differential Intercept and Differential Slope Between Coefficients of Male and Female Samples: The Interactive Model, Model 2

	Estimate (Wald-statistics)	
	Friendship ties	Family ties
Gender (Male)	.515 (.437)	-1.414 (3.616)*
Education (Junior)	-.172 (.719)	.441 (5.093)**
Age	.0002 (.023)	-.0003 (.060)
Household type (couple)	-.241 (.691)	.138 (.245)
Government Pension	-.004 (.057)	.181 (.825)
Dependence (full independent living)	.747 (9.033)**	-.007 (.093)
Residency status (10+ years)	.728 (10.185)**	.003 (.020)
Accommodation type (house)	-.219 (1.105)	.302 (2.292)
Gender x Household type	-.167 (.141)	.798 (3.529)*
R^2	.067	.054
χ^2	23.726**	19.359**

Source: Household Survey 1999 * Significant at 0.05 level (two-tailed). **Significant at 0.01 level (two-tailed)

Significant differences also occur in the slope coefficients for the "family ties" model. The coefficient of the interaction term for household type, as an explanation for the frequency of contact with family, is positive and significant. This verifies that household type is pronounced among men. Thus it can be said that men are sensitive to living arrangements (live alone or as a couple) in terms of their frequency of contact with family.

9   DISCUSSION OF THE RESULTS

With the growing emphasis on home-based care, informal support by family and friends is increasingly an important resource for older people.

9.1   Descriptive Statistics

The descriptive statistics from our household survey reveal that there is lesser informal support within single-person households when compared to couple households. This is consistent with previous studies by Arber and Ginn (1990), Manning and King (1992), ABS (1994), Gonyea (1994), Schulz (1991), and OWN (1995). Of those living alone males appeared to possess a deficit in access to social network.

The larger proportion of divorced/separated single males (17% of single males) to single females (12% of single females) in our household survey implies that a higher proportion of these men possess inadequate social network[19]. Added to this is the reluctance of the older men to accept assistance (as suggested by our key informants and evidenced in our household survey) which raise further concerns about adequate care and support for these men.

In contrast to single men single women are more open and accepting of assistance which, in turn, strengthens their social networking. While 13% of single females stated that they were always willing to accept help from government sources, only 5% of single males and couples reported that they would do so. The remaining respondents stated that they would only use such services when they were recommended by either their doctor or they reached a critical situation, or never. While it was expected that respondents from couple households would be less reluctant to accept outside help because of the strong support base within the home, the reluctance of single males to accept help was while surprising, in line with the expectations of our key informants. It could be said that the results reflect a culture of independence associated with masculinity among older males.

Generally we found that across all groups social networking among the Gold Coast respondents appeared to be more tied to friends and less to the family. Although over 50% of respondents had contact with friends at least once a week, less than a third had similar contact

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[19] Antonucci (1990) reported that separated and divorced older men had the weakest social network.

with family. The migration of older Australians away from their families to retire on the Gold Coast explains the greater frequency of contact with friends in this region. Our household survey reported that 28% of respondents resided on the Gold Coast for less than 10 years. A notable 34% of those surveyed previously resided outside Queensland's southeast region, while a further 58% had previously resided outside Queensland. On average single males reported the shortest stay on the Gold Coast (6-10 years) compared with others (10 or more years).

9.2   Statistical Analysis

Regression analysis reveals that, in comparison to couples, those living alone experience less contact with family. Also, among the total sample, the lower educated met with family more frequently than the better educated counterparts. As education and income are positively correlated, this result was not surprising considering that higher income levels increase opportunities for retirees to migrate away from family (to the Gold Coast).

When testing for explanatory variables special to the Gold Coast, we found that, as expected, those residing on the Gold Coast less than 10 years possessed weaker social networks.

A feature special to the Gold Coast region is the greater proportion of older people residing in high-rise accommodation units (5.4% of the total older population), compared to Queensland in general (1.5% of the total older populations) and the Australian average (2% of the total older population) (ABS 1996). Such living arrangements could mean that these residents may face greater social isolation than others. Indeed interviews with key informants and high-rise apartment managers led to assumption that older people, residing in high rise apartments, are most vulnerable to social isolation. However we found no evidence of this in our statistical

data. Possibly the low proportion of high-rise apartment residents (9.7%) in our analysis may have biased the results. There is the possibility, of course, that those residing in these apartments do not face social isolation. As high-rise residential apartments are located in high-density areas where there is easy access to public transport, health services, shops and entertainment. This could create greater opportunities for social integration.

The above statistical analysis answers the research question - that "males are more vulnerable than females to the social network effects of living alone" - in the affirmative. Additionally, the frequency of contact with family is different between older males and females, with older males more sensitive to their living arrangements. Single older males appear to possess weaker family ties than single older females.

10   CONCLUSION

Our analysis reveals that: 1. household type, residency status and education explain the social network of the Gold Coast older population; and 2. older males are more vulnerable than older females to the social network effects of living alone.

Currently single older males are adequately supported under the HACC programme mainly due to the many support services available in the Gold Coast region. This is evidenced by the general satisfaction of health services reported by the survey respondents (Gold Coast Household Survey 1999). Although groups are protected by the safety nets of government entitlements and programmes, the current political environment of cost cutting and notions of self-reliance, means that the circumstances of vulnerable groups need to be closely monitored.

Unless formal support from community care is maintained, single older males may be faced with increased hardships (Arber and Ginn 1991) since community care is increasingly reliant on the informal support provided by friends and family. Indeed this seems an essential ingredient in the maintenance of health and wellness for our ageing population and their continued independence through non-institutional living.

REFERENCES

Agresti, A. and Finlay, B. (1997) *Statistical Methods for the Social Sciences. Third Edition,* New York: Prentice Hall.

Australian Institute of Health and Welfare. (1999). *Older Australians at a Glance. Second Edition,* Canberra: Commonwealth of Australia.

Arber, S. and Ginn, J. (1991) *Gender and Later Life. A Sociological Analysis of Resources and Constraints,* London: Sage.

Antonucci, T. (1994) 'A Life Span View of Women's Social Relations' in *Women Growing Older,* in Turner, R. and Troll, I. (eds), London: Sage.

Australian Bureau of Statistics. (1996) Unpublished data 1971-1996.

Australian Bureau of Statistics. (1995) *Focus on Families, Family Life,* Catalogue no 4425.0, Canberra: ABS.

Australian Bureau of Statistics. (1994a) *Western Australia's Seniors,* Catalogue no 4106.5, Canberra: ABS.

Australian Bureau of Statistics. (1994b) *Australian Women's Year Book*, Catalogue no 4113.0, Canberra: ABS.

Australian Bureau of Statistics. (1998) 'ABS Directory of Census Statistics 2910.0. Controls of Census from 1911 to 1996', http://www.abs.gov.au/websitedbs/d311012…292acdobd29c925653f007ee6bc?opendocument, October 1998. Visited 6 December, 1998.

Avlund, K., Damsgaard, M. and Holstein, B. (1998) 'Social Relations and Mortality. An Eleven Year Follow Up Study of 70 Year Old Men and Women in Denmark', *Social Science and Medicine*, V47, Issue 5, pp635-643.

Barber, B. (1994) 'Men and Women Ageing Differently', *International Journal of Ageing and Human Development,* V38, N1, pp29-40.

Berkman, L., Glass, T., Brissett, I. and Seeman T. (2000) 'From Social Integration to Health: Durkheim in the new Millennim', *Social Science and Medicine,* 51, pp843-857.

Berkman, L. (1995) 'The Role of Social Relations in Health Promotion, *Psychosom. Med.*, 57, pp245-254.

Blieszner, R. (1993) 'A Socialist-Feminist Perspective on Widowhood', *Journal of Aging Studies*, V17, N2, pp171-182.

Cohen, S. (1988) 'Psychosocial Models of the Role of Social Support in the Etiology of Physical Disease', *Health Psychology*, 7, pp269-297.

Connell, W. (1993) Reshaping Australian Education 1960-1985. Victoria: Shannon Press.

Commonwealth Department of Health and Family Services. (1998) *Staying at Home. Care and Support for Older Australians*, Canberra: Commonwealth of Australia.

COTA (Council of the Ageing Australia). (2000a) *Older Australians: An Agenda for the New Millennium in Health and Aged Care,* Submission to the Federal budget 2001-2001, December.

COTA (2000b). *World Class Care. Response to National Strategy for an Ageing Australia,* Discussion paper, October.

Courtney, M., Minichiello, V. and Waite, H. (1997) 'Aged Care in Australia: A Critical Review of the Reforms', *Journal of Aging Studies,* V1, N30, pp229.

Goldney, R. and Harrison, J. (1998) 'Suicide in the Elderly: Some Good News', *Australasian Journal on Ageing,* V17, N2.

Gonyea, J. (1994) 'The Paradox of the Advantaged Elder and the Feminization of Poverty', *Social Work,* V39, N1, pp35-41.

Gujarati, D. (1999) *Essentials of Econometrics, Second Edition,* Boston: McGrawhill.

Hessler, R., Jia, S., Madsen, R. and Pazaki, H. (1995) 'Gender, Social Networks and Survival Time: A Twenty Year Study of the Rural Elderly', *Archives of Gerontology and Geriatrics*, V21, pp291-306.

House, J., Landis, K. and Umberson, D. (1988) 'Social Relationships and Health', *Science,* Washington, July 29, V241, Issue 4865, pp540-546.

Keith, P.M. (1986) 'The Social Context and Resource of the Unmarried in Old Age', *International Journal of Ageing and Human Development*, V23, pp81-96.

Kendig, H., McVicar, G. and Reynolds, A. (1992) *The Victorian Linkages Evaluation,* Melbourne: Department of health, housing and community services and community services Victoria.

Lee, G., Willetts, M. and Seccombe, K. (1998) 'Widowhood and Depression: Gender differences', *Research on Aging*, Beverly Hills; V20, Issue 5, p611.

Manning, I. and King, S. (1992) 'Incomes and Housing Costs of Older Australians', *Social Security Review*, ACT: Department of Social Security.

Marginson, S. (1997) *Educating Australia. Government, Economy and Citizen Since 1960.* Cambridge: Cambridge University Press,

Millward, C. (1999*) Understanding Links between Family Experience, Obligations and Expectations in Later Life,* Australian Institute of Family Studies, Working paper 19,

June.

Millward, C. (1998) *Family Relationships in Intergenerational Exchange in Later Life,* Working Paper No 15, Australian Institute of Family Studies.

Office of Ageing. (1991) *Queensland Seniors,* Department of Family Services and Aboriginal and Islander Affairs, Brisbane: Queensland government.

Older Women's Network Australia. (1995) Submission to the Senate Standing Committee on Superannuation.

Onyx, B. and Bradfield, B. (1991) 'Community Development and Government Response', *Community Development Journal,* V26-27, pp166-174.

Sax, S. (1993) *Aging and Public Policy in Australia,* Sydney: Allen and Unwin.

Schulz, J. (1992) *The Economics of Aging. Fifth Edition,* New York: Auburn House.

Schulz, J. Borowski, A. and Crown, W. (1991) *Economics of Population Aging. The Graying of Australia, Japan, and the United States,* New York: Auburn House.

SPSS (1999*) SPSS Advanced Models 10.0*, Chicago: SPSS Inc

Tabachnick, B. and Fidell, L. (1996) *Using Multivariate Statistics Third Edition,* California: Harper Collins College.

Vecchio, N., Jackson, S., and Guest, R. (2001) 'Socioeconomic Differentials of the Aged on Queensland's Gold Coast. Why education matters', *Economic Papers*, V20, N3, pp43-58.

Victorian Parliament. (1997) *Inquiry into Planning for Positive Ageing,* Family Community Development Committee, Melbourne: Victorian Government.