COMMUNITIES IN PROFILE
A COMPARISON OF CAREGIVING IN GLACE BAY & KINGS COUNTY

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. GPI Atlantic Survey

The Kings County and Glace Bay research program has been community-driven since its inception and involves collaboration among an extensive variety of partners. The development of a questionnaire to be used as an index of well-being in Glace Bay and Kings County began in 1999. With input from community organizations, including community and regional health board representatives, a questionnaire was developed to collect baseline data on several variables related to health, caregiving, labour force participation, peace and security, voluntary/civic work, impact on the environment, and other elements of well-being.

Many previous reports on caregiving focus on the services available, profiles of caregivers, and burden of care. These reports have, most often, reported aggregated data at the provincial and national levels. This report is unique in that it focuses on community level data from two Nova Scotian communities. Accordingly, this report provides community level information from the original survey data collected from Glace Bay and Kings County residents, on health, demographics, and employment in relation to caregiving. The socio-economic variables included in this analysis are income, education, and occupational type and status. The demographic variables included age, gender and marital status. In particular, the focus of this report was to examine the following relationships.

(1) The associations between the socio-economic and demographic information for caregivers in Glace Bay and Kings County and health status, health service utilization, and health behaviours.

(2) The differences and similarities between caregivers in Kings County and Glace Bay in relation to socio-demographic variables and health status, health service utilization, and health behaviours.

2. Background

The changing nature of families, population demographics, economics, roles in the workplace, and health services have brought the issues of family caregiving and unpaid work to the forefront of policy debate. Recent trends have indicated that families are less stable and more diverse, with an increasing prevalence of children moving away from their families and communities to find work or attend school (Fast & Keating, 2000). These trends, combined with the increase in longevity and new patterns in chronic illness, leave much of the caregiving responsibilities for elderly parents with spouses and friends. Additionally, the devolution of health care services to the community has also transferred considerable responsibility for care to unpaid caregivers (Cheal, 1998). Furthermore, because of the severe fiscal restraints that have been placed on health services in recent years, this care can be technically demanding, complex, and costly when patients are sent home at earlier stages in the treatment process (Payne et al., 2001). Recently, Romanow (2002) has echoed these concerns. He reported “home care has become a partial substitute for care that was previously provided primarily in hospitals or by physicians.” This transfer of responsibility has various affects on family caregivers, and impacts all aspects of their

lives: mental and physical, social, family, labour force participation, and financial (Guberman, 1999). Statistics Canada's 2001 Census found a 17% increase in the number of Canadians providing care for seniors since the 1996 Census. Considering the increase in Canada's population, this means that there was a 10% increase in the proportion of people providing such care. The number of Canadians spending 10 or more hours per week caring for the elderly increased by 20% (Statistics Canada Census, 2001). In addition, nearly twice as many women as men spend long hours caring for the elderly. In the week prior to the 2000 Census more than 430,000 Canadian women (3.5% of adult women) spent more than 10 hours per week caring for aging parents and other elderly relatives, compared to fewer than 220,000 men (1.9% of adult men) (See Table Appendix 1).

Definition of caregiving

The concepts of "unpaid work" and "unpaid care-giving" have been extensively reported in recent years, albeit they have been treated as separate concepts in the academic and general literature. Unpaid caregiving has also been referred to as "informal care" (Romanow, 2002); as opposed to formal care given by a paid health care worker (Fast and Frederick, 1999). Unpaid work has been defined as "the unpaid work households do by and for themselves, including domestic chores, childcare, and shopping" (Economic Justice Report). However, central to the focus of this report is the concept of unpaid caregiving. Accordingly, the concept of unpaid caregiving is defined as 'unpaid work conducted for family members, friends, and neighbours (either adults or children) that require care or help with daily activities.' These activities fall into two categories. The first, "instrumental tasks" include grocery shopping, assistance with transportation, and yard or housework. The second, "personal care" includes activities such as bathing, dressing, or grooming (Statistics Canada, Cranswick, 1997). Statistics Canada's 1996 General Social Survey conceptualized a second type care – "caring about." This type of care involves a psychological connection between people. For instance, it can refer to someone caring about another person by providing emotional support or encouragement. "Caring about" can also include checking up on an elderly relative or neighbour who lives alone.

The range of caregiving activities has also been changing with the devolution of health care services and the move to community-based care. The population health model encompasses the concept that the best place for emotional and social support during the recovery process is with family and social networks. This philosophy, together with advances in medical technology, facilitates longevity and enables, or forces, those individuals with disabilities to live outside formal health care institutions. This has a significant effect on the types of tasks caregivers are required to perform. These activities often follow the traditional gendered division of labour within caregiving households. That is, women provide most of the emotional/social support while men perform more physical and organizational tasks (Miller & Caffasso, 1992). The 2001 Census results reflect this notion. In fact, the household gendered division of labour has shifted very slightly since the 1996 Census that reported that 24.5% of women and 7.4% of men spent 30 or more hours per week doing housework, and 16.8% of women and 6.2% of men spent at least 30 hours taking care of children. In addition, nearly twice as many women as men spend long hours caring for the elderly. In the week prior to the 2000 Census more than 430,000

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This gendered division of labour is more explicit in rural areas where traditional values are more prevalent. In addition, rural caregiving tends to focus more on informal caregiving supports because of these traditional values about family. Some argue that the reliance on informal caregiving in rural areas is also a reflection of the lack of services in these areas (Campbell et al, 1998). However, others have disputed this notion and conflicting results have been reported. Based on secondary analysis of the General Social Survey (GSS) of 1996, Keefe (1999) has reported that the types of task that are required may dictate whether those in rural areas seek formal or informal care, and this differs by gender. For instance, rural unpaid caregivers are more likely to provide assistance with meal preparation, house cleaning, home maintenance, and personal care. Urban caregivers are more likely to provide assistance with banking, transportation and grocery shopping. These findings may reflect the difficulties with transportation, and the geographical proximity of amenities in rural areas. Differences by gender were also evident in the 1996 GSS. Rural men were more likely to require assistance with meal preparation, personal care, and house maintenance than rural women. This finding may be explained by the fact that more elderly in the rural areas are living in single dwelling homes as opposed to their urban counterparts who are more likely to live in apartments or condominiums.

Caregivers

In the United States, it is estimated that unpaid caregivers contribute almost $200 billion annually to the economy in unpaid health care (Health Affairs, 2001). In Canada the estimates are similar. Fast and Frederick conducted a cost replacement analysis on unpaid caregiving in Canada using data from the General Social Survey and Statistics Canada. They reported "The aggregate replacement cost for all Canadian caregivers in 1996 is estimated between $5.1 and $5.7 billion." This estimate does not include other personal costs such as lost wages, inability to contribute to pension plans, inability to maintain a full-time job, and costs to the health care system associated with adverse health effects due to their caregiving activities. However, many of these estimates may be an underestimate of actual costs, since they may only include care provided to the elderly and exclude costs associated with providing care to mentally or physically challenged children and young adults. As well, none of the estimates appear to include the significant input value that these informal care activities have on the general well-being of society and the development of human capabilities such as education, and mental and physical health. Therefore, it may be more valid to estimate costs based on foregone wages that would require higher opportunity cost estimates of the value of caregiving work rather than the more conservative replacement cost estimates used by Fast and Frederick. In Nova Scotia in 1997, GPI Atlantic estimated the value of unpaid work and childcare to range from $8.5 to $10.5 billion. This figure depends on the evaluation method used but represents 42-51% of the annual value of the GDP (GPI Atlantic 1998, 95).

In a Canadian study conducted in 1996, over 12% of the population or 2.6 million people reported providing unpaid care to someone with long-term health problems (Cranswick, 1997). Of these caregivers, most were women (69%) who felt that they provided most of the care to

their elderly family members or friends. Most caregivers were aged 45 and older (60.6%), with the average age being 42.2 years. All respondents reported an average of 28 hours per month in caregiving activities, but among those who provided personal care this increased to 60 hours per month or more. Caregivers of disabled children differed slightly from those that report eldercare responsibilities.

In a study conducted by the Roeher Institute (2000) in Saskatchewan, Manitoba, Ontario, Quebec, and New Brunswick, 96% of those providing primary care for a disabled child were mothers, despite the fact that three-quarters of the participants were from two-parent households with the remaining households being a female-led, lone-parent families. Family income ranged from low to high with only one family relying on social assistance for their financial income.

In British Columbia (BC), Canada, the Caregivers Association of BC and the Centre on Aging, University of Victoria conducted a provincial telephone survey to identify and collect information on adult caregivers (Chappell and Litkenhaus, 1995). An initial screening survey was conducted to over 30,000 BC households. Approximately 2000 households participated in the in-depth survey. Their findings suggest that 8.4% of households (99,512) in BC provide unpaid care to a family member or friend who has a "long term (6 months or more) illness, physical disability, mental handicap or long term mental health or behavioural problem."

These findings are similar to those found in national studies in that most caregivers were women, at least in the middle age-group, and were married and living with their spouse. Many of the caregivers had left the workplace in order to fulfil their caregiving activities. In addition, of the caregivers surveyed, approximately two-thirds were stressed about their caregiving responsibilities. Women caregivers reported being more stressed than their male counterparts. In part, this may be due to the gendered division of labour in caregivng tasks. As reported previously, women perform most of the personal hygiene and daily tasks, where men most often perform the instrumental tasks such as grocery shopping, paying bills, and maintenance.

The rural/urban differences in caregiver characteristics have been documented both nationally (Keefe, 1999) and provincially (Bruhm and Lilly, 1998; Jaffe and Blakley, 2000). Based on Keefe's analyses of the General Social Survey (1996), caregivers in rural areas tend to be slightly younger than their urban counterparts, are more likely to be married, but less likely to have completed high school. Household incomes varied between rural and urban caregivers; rural caregivers earned less money than urban caregivers. However, rural caregivers were more likely to be Canadian born, and to live in close geographical proximity to their children.

By comparison, Wilkins (1992) contends that rural caregivers tended to be older and rely on informal health services, outside the family. This, in part, may be due to the fact that there are fewer services and supports in rural areas in relation to urban centres, and therefore caregivers in rural areas have to rely more on their informal supports and networks. Wilkins' contentions may be supported by a number of factors. For example, (1) over 1/3 of older Canadians live in rural areas, and (2) there is a growing tendency for young people to migrate to urban areas for reasons related to employment and education, and therefore not to be available to lend assistance.

In the United States, caregiver characteristics are similar to those in Canada. That is, most caregivers are women (71%) and are aged 45 years and older (76.9%). Income of caregivers in the United States appears to be slightly lower, with 88.6% falling into the middle-income category and below. In addition, 80% of the caregivers provided unpaid assistance 7 days a week to their care receivers. Gender differences with respect to the task performed were also similar to those found in Canadian studies. Women reported more often than men that they performed personal hygiene tasks. However, in contrast to some studies, one U.S. study found that men spend slightly more time per day on caregiver tasks than women (Stone et al, 1987).

A longitudinal review of caregiver activities provides evidence that, in the United States, some characteristics of caregivers have not changed dramatically between 1987 and 1997. In particular, 72.5% of all caregivers are still women. However, there are some differences with respect to income, and age. Most caregivers are younger, between 35 and 64 years, and more recently there appear to be no dramatic differences in household income between caregivers and non-caregivers.

Increased longevity has also affected the age of the caregiver. With increased life expectancy many caregivers are elderly or frail themselves and are responsible for the care of a disabled or ill spouse or other family members. Guberman (1999) reports that there is an "increase in the number of caregivers in their 80s and 90s looking after their disabled husbands."

Labour force participation and caregiving

Changing trends in labour force participation, characterized by an increase in the number of women employed in paid labour, has significant effects on who will assume the care-giving role in the home. Although men assume some responsibility for family caregiving, it appears that women perform the majority of unpaid care-giving in Atlantic Canada, despite their increase in participation in the paid labour market (Colman, 2000). Women's paid labour force participation has been steadily increasing since the 1960s, although it has levelled off in the 1990s. In Canada, women comprise 46% of the labour force and 70% of women between the ages of 25 and 44 work outside the home in paid labour (Statistics Canada, 1999). Since most caregivers are women, this trend may cause increasing concern about the availability of caregivers. However, information from the 2001 Canadian Census has not supported this assumption. In fact, employed women are as likely to assume caregiving activities as unemployed women (Pavalko and Artis, 1997). Moreover, some reports have shown that, with respect to the care of the elderly, "employment is a differentiating factor only when the unpaid assistance is 10 hours a week or more" (Keefe and Fancey, 1998). Accordingly, employed caregivers experience difficulty with balancing home and work only when their caregiving responsibilities exceed 10 hours per week.

Stress from balancing work-life activities is not alleviated by a spouse's contribution to unpaid work, nor by most the type of job held by the caregiver. However, reports indicate that employed caregivers experience a variety of job and personal costs that are associated with caring for an elderly relative. These job costs include missed meetings, absenteeism, lateness, and foregoing promotions. Personal costs include, perceived levels of stress, and work

interference with family life. Stone and Short (1990) reported that women are more likely than men to try to balance work and care responsibilities by reducing hours, taking leave without pay, and terminating employment. In fact, nine percent of women caregivers will leave employment to assume caregiving responsibilities (Canadian Study on Health and Aging, 1994; Guberman, 1999). "However, there is evidence that women, more so than men, use strategies such as self-employment to improve work-life balance" (Phipps et al, 2002). Therefore, those women who work outside the home more than 10 hours per day are burdened with the stress of labour force participation and performing unpaid care-giving tasks.

Women are reported to experience more role conflict with respect to their home and paid labour responsibilities than men (Kramer & Kipnis, 1995). The relationship between stress, disease, and the increased utilization of health care resources has been highly recognized. Factors that appear to mediate the impact of unpaid caregiving and employment stress are income and money. Duxbury and Higgins (2001) found that stress is higher in families where income is problematic than in those where money was not an issue. Financial resources appear to be able to assist people in coping with the stress of work-life balance. Frederick and Fast (2001) reported that other factors could also alleviate the pressures of work-life balance. These factors include extended family, job satisfaction, control at work, and employer programs (Phipps, 2002).

Caregiver Well-being

The burden associated with caregiving responsibilities has been reported in the literature to include: well-being; physical and psychological health effects or outcomes; and quality of life. Generally, most studies report that caregivers suffer increased risks for physical and psychological health, although this fact may be confounded by other factors such as type and duration of caregiving, age, and income (Shultz, Vistainer & Williamson, 1990). Some studies have referred to caregivers as the "hidden patients" (George and Gwyther, 1986; Johnson, 1998), since many of their health problems go unnoticed or untreated until after their caregiving responsibilities have ended.

Many studies relate caregiver health effects to specific diseases of the care receivers, such as Alzheimer's Disease or dementia. Few studies refer to caregiver health outcomes in relation to providing care for chronically ill children.

The following studies provide a wide variety of evidence associated with caregiver well-being, but on the whole the association between caregiving and well-being is inconclusive. The variability of findings may be due to problems with the validity of measuring instruments, inappropriate use of instruments, problems associated with self-reporting, low sample sizes, or poor sampling techniques. However, some of these problems, such as low sample sizes and problems associated with sampling techniques may be unavoidable and are inherent in the type of population being studied. In addition, the difficulty in finding morbidity effects among caregivers is compounded with the fact that many give up their caregivng role if they become ill. Moreover, many symptoms may not be detected because caregivers lack the time to seek medical help or they do not seek it until after their caregiving responsibilities are over.

George and Gwyther (1986) conducted a mailed survey with caregivers from a family support program in the United States. Sample characteristics depicted that most caregivers were women (71%) aged between 21 and 90 with a mean age of 57 years. Several instruments were used to measure physical and emotional health and these were related to the caregiving contexts (egg. relationship to care receiver, caregiver's perceived need for social support), and patient illness characteristics (egg. duration of illness, severity of symptoms). Results indicated that caregivers had similar characteristics to random community samples with respect to use of medical services and self-rated physical health status. However, caregivers performed worse on indicators of mental stress than non-caregiver comparison populations. In particular, the results indicated that caregivers experienced three times as much stress as a non-caregiver comparison sample.

Much of the literature indicates that income is a determinant of health and can affect health outcomes. That is, studies have shown that as income increases so does the likelihood of reporting excellent or good health. Although in the George and Gwyther study income was a controlled variable, some caregiver studies have not done so and therefore the results may be inconclusive. Correlations between patient illness characteristics and well-being supported the notion that the more severe the patient's symptoms, the lower the self-rated health, and the higher the stress symptoms. Nonetheless, in some studies this has been explained has the severity of behavioural problems, rather than the severity of physical symptoms (Baumgarten, 1989). The duration of illness of the care receiver was also considered a factor in caregiver health status. George (1986) found that illness duration was not associated with indicators of well-being. However, Haley and Pardo (1987) found that if illness duration coincided with severity and deterioration of the illness, then caregiver stress increased.

The relationship of the caregiver to the care-receiver was also a factor in caregiver well-being. Caregiver spouses were more likely to report more physician visits and poorer health than either, adult child caregivers or relative/friend caregivers. Moreover, these results persist when age differences are statistically controlled. This result may be confounded with caregiver living arrangements because it was indicated that caregivers who lived with their care-receivers were more likely to suffer higher levels of stress than those that had other living arrangements.

Beach, Shultz and Yee (2000) conducted a study to examine the health effects of caring for an elderly adult in a population-based sample of 680 caregivers. They reported that, after controlling for socio-demographic variables, increase in help provision resulted in decreased anxiety and depression. In addition, increases in spouse impairment also led to poorer health outcomes, higher health risk behaviours, and anxiety. Although many studies do not examine the positive aspects of providing care, Beach and colleagues included this analysis in their study. They reported that there were certain mental health benefits associated with helping a disabled person, although the magnitude of this effect was small explaining only "1% and 6% of the variance." This suggests that there may be both positive and negative benefits of providing care.

Studies on the burden of caregiving identify several areas of the caregivers' lives that are adversely affected due to their caregiving responsibilities. Many caregivers report adverse effects on their emotional health, social activities, leisure time, and family relationships (Anderson, Linto, Stewart-Wynne 1995). Similarly, Snow-Spracklin (1998) found that, in a sample of 75 primary caregivers, caregiver burden was strongest for personal and social

restrictions, and physical, emotional, and economic costs. Accordingly, some studies have investigated the relationship between caregiver burden and social support as an intervening factor in these social and emotional outcomes.

Some results indicate that the perception of social support has a significant impact on caregiver well-being. However, other studies provide conflicting evidence on social support and well-being. The variability in results may be explained by how the concept of 'social support' is operationalized. George (1986) reported that high levels of perceived social support were associated with an improved caregiver well-being. Similarly, a study on 75 caregivers revealed "greater tangible support was associated with physical and mental health. However, there were no differences in the perceived mental and physical health of caregivers and the presence of formal support systems (Snow-Spracklin, 1998).

Few studies have investigated physical measures as a health outcome in relation to burden of care. Uchino, Cacioppo, & Kiecolt-Glaser (1996) reviewed 81 studies on caregiver social support and physiological processes. They reported that social support was related to "beneficial effects on aspects of the cardiovascular, endocrine, and immune systems."

Health Practices

It has been suggested that, higher rates of psychological distress, emotional stress, and impaired family and social functioning in relation to unpaid caregiving responsibilities may translate into higher health care utilization rates. However, many studies provide conflicting evidence that may be due to the inherent characteristics of the population being studied. For example, in general, it has been proposed that the daily time requirements of unpaid caregiving may interfere with the caregiver's ability to partake in preventive health practices and positive health behaviours. That is, for those caregivers who are unable to get adequate sleep, it may be impossible to have enough energy to exercise, meet with friends, or cook nutritious meals.

To date, there are few studies that examine health behaviours in relation to caregivng. Of the studies reviewed for this report, most have been conducted with an eldercare population, and have controlled for income and age. A mailed survey of 272 caregivers of spouses with dementia and a comparison group of 917, over the age of 50, was conducted from a member's list of the Kaiser Foundation Health Plan in Northern California (Scharlach et al., 1997). The results indicated that for those caregivers that had adequate access to health professions and services, there were no differences in their health care practices than those of the comparison group. The health behaviours included getting regular exercise, sleeping moderately, eating breakfast daily, and smoking and alcohol consumption. Health care practices included routine physicals, flu shots, and preventive health practices such as mammograms. These practices were also examined in relation to care assistance, and care recipient and caregiver characteristics.

A Canadian study on secondary data from a longitudinal study on elderly caregivers revealed similar results (Baumgarten et al., 1997). The annual cost of physician services for caregivers and non-caregivers was similar. However, there were differences in the type of physician services used between caregivers and non-caregivers. Caregivers had a significantly higher

frequency of use of internal medicine and psychiatrists than the comparison group. However, physician use was strongly associated with age and the caregiver suffering from a chronic condition. Other Canadian studies have shown similar results. An Ontario study on secondary data from the Ontario Health Survey investigated mental health utilization rates. Results showed that caregivers used services for mental health problems at nearly twice the rate of non-caregivers (Cochrane, Goering & Rogers, 1997).

3. Objectives and Research Methodology

Objectives and Hypotheses

The objectives of this study were:

1. To examine the relationship between caregiving and health behaviours and practices in relation to socio-demographic variables.

2. To examine the similarities and differences in health behaviours and practices between caregivers in two Nova Scotian communities (Glace Bay and Kings County) in relation to socio-demographic variables.

Several general hypotheses were generated based on the current literature on caregiving.

1. Caregivers are more likely to be female and married, be in an older age group, not in the labour force, and have less education and a lower income, than the comparable general population.
2. Caregivers are more likely to have poorer perceived emotional health status, and are likely to have similar physical health status as non-caregivers.
3. Caregivers and non-caregivers will have similar self-reported health care utilization patterns.
4. Caregivers will have similar health behaviour patterns than non-caregivers.

Based on preliminary results of the GPI Atlantic data for this study, the following hypotheses concerning the differences and similarities between caregivers in Glace Bay and Kings County were generated.

1a. The average age of caregivers will be lower in Kings County compared to Glace Bay.
2a. Based on the age of the population, Glace Bay caregivers will use health care services more than those in Kings County.
3a. Caregivers in Glace Bay will have a lower average income and lower education levels than Kings County.

Survey Instrument

The original survey, conducted by GPI Atlantic, collected information on basic demographics and education, community values, population health, civic and voluntary work, care-giving and support networks, employment and income, time use, peace and security, consumption patterns, and other variables, that are core elements of the Genuine Progress Index (GPI). The questionnaire was developed, with assistance from Statistics Canada's Social Survey Methods Division, to allow provincial and national comparisons, and thus to serve as a model for wider use. Accordingly, particular questions are drawn from existing Statistics Canada surveys including the General Social Surveys, National Population Health Surveys, Labour Force Surveys, Survey of Work Arrangements, national volunteer surveys, and other survey instruments. However, because these larger surveys are administered separately, they do not permit nearly the extent of correlation possible in the GPI community survey.

Based on Statistics Canada advice, it was determined that 1,900 surveys from Kings County and 1,700 from Glace Bay would be required to allow for two cross-tabulations, and analysis by gender, age, education, income level, employment status and other determinants of health. With assistance from the Electoral Commission and HRDC, a random sample of 1,900 (Kings) and 1,700 (Glace Bay) respondents was selected. The survey was "pilot-tested" to 200 respondents both communities, and necessary adjustments were made to the questionnaire and the survey process prior to the final survey administration.

Survey administration was conducted as follows: An initial telephone call was made to each respondent to set up an interview; the instructions were explained face-to-face; the survey and time-use diary were left with the respondent; a follow-up phone call was made after 4 days; the survey was picked up and checked for completion; respondent names were discarded to ensure confidentiality.

The response rate of the questionnaire has been 82% for Glace Bay, and is 70% for Kings County. The large sample size will allow for two cross-tabulations of data, with a confidence level of 95% and a margin of error of 5%.

For the purpose of this report, and based on the objectives outlined previously, the following variables were included in the analyses.

Demographic Variables

Demographic variables were included in the analyses for comparative purposes. Community and gender were dichotomous variables (e.g. either Kings County or Glace Bay; male or female). Marital status, education, age, and household income were categorical variables. Marital status was re-coded to be married or not married for the purpose of the analyses. Household income was recoded into 5 categories: <$10,000; $10,000-19999; $20,000-34999; $35,000-50000; >$50,000. The question on education asked respondents to indicate their highest level of education and was categorized as: primary (P-8); Grade 9-12; Community College; university degree. Age was recoded to include: 15-24; 25-34; 35-44; 45-54; 55-64; >65 years.

Occupational type was based on previous surveys and included ten categories plus 'other.' For example, management; health; art, culture, recreation and sport; trades, transportation, equipment operator. Respondents' employment status was determined from the question concerning their main activity. This question asked respondents to indicate whether they were employed, unemployed, student, homemaker, or retired, and other.

Health Status Variables

A number of variables were utilized to determine both objective and perceived health status for both physical and emotional indicators. Perceived health status was categorized on a 5-point Likert scale and respondents were asked to rate their health between excellent and poor. Other variables included as indicators of health status were restriction of activities, and medication use. Respondents were asked to indicate whether they experienced pain sufficient enough to restrict their activities. Several questions referring to different types of drug use were also included. Some of the drug types were anti-inflammatories, heart medication, anti-depressants, asthma and others. Respondents were asked to indicate from various categorical choices their frequency of using a particular medication. Emotional health was measured using several questions asking respondents to indicate whether they felt sad, nervous, restless, stressed, or depressed.

Health Care Utilization

The questions concerning health care utilization were separated by type of health care provider. Types of health care providers were physicians, other health care professionals, emergency/outpatient visits, and mental health professionals. The variables were re-coded to include the number of visits as:<=2; 3-12; 13-24; >24.

Health Behaviours

The questions on health behaviours, including risk behaviours, included questions on smoking, frequency of pap smears, mammograms, and exercise patterns. For instance, questions concerning smoking behaviour requested that respondents indicate the frequency of smoking (i.e. daily, weekly, monthly, not at all). Questions on preventive health practices requested that respondents indicate the last time they had a mammogram or pap smear. For the purpose of this analysis, these variables were re-coded to a dichotomous variable. Re-coding allowed inclusion of the respondents who answered either 'yes or no' in response to whether they had a pap smear/mammogram within the year previous to the survey.

Social Support

The literature indicates that social support is important for caregiver well-being. There were several variables included in the analyses that were used as a reflection of social support. Respondents were asked to indicate how often they had contact with family/relatives not living

with them, and neighbours. In addition, their ability and frequency of partaking in community events were also considered important indicators of a respondent's ability to maintain a social network.

4. The Communities

According to the last Canadian Census, the population of Kings County is approximately 58,870. It is located in the Annapolis Valley of Nova Scotia - a predominantly agricultural area of the province. It is one of only a few communities in Nova Scotia which is experiencing population growth, and it is an area of the province which has relatively high health status, based on premature mortality rates (Pennock, 1998). The general population gender split is 49% males and 51% female and the unemployment rate is 9.1% (compared to 12.4% for the whole province). The median age of Kings County residents is 38, and 58% are either married or living in common law relationships. Approximately 56% percent of the population have a university or community college education, (compared with approximately 35% of all Canadians with post-secondary education), and the average income is $24,196 compared with $26,239 for all of Nova Scotia.

Glace Bay is located in industrial Cape Breton. It has a population of 21,187 and is experiencing both population and economic decline. It is located in a part of Nova Scotia that is notable for its low levels of health status (Veugelers & Guernsey, 1999). For example, Cape Breton's cancer death rate is 25% higher than the national average, and the rates of death from heart disease and circulatory problems are 30% higher. Overall, Cape Breton has the highest age-standardized mortality rate in the Maritimes (Colman, 2003). Consequently, the two communities represent very different occupational and socio-economic profiles. Rates were not available for Glace Bay, therefore, the following statistics reflects the entire Cape Breton Regional Municipality. As expected, the unemployment rate is high at 19.4%. The gender spilt is 47% males and 53% females and the median age is 41.3. Forty-six percent of the population have a university or community college education and the average income is $22,602.

5. Data Analysis

Chi-squared tests of association were used to examine relationships between categorical variables such as demographic (gender, age, and marital status) and socioeconomic (household income, employment status, and level of education) characteristics. These tests were only used with categorical data and between variables with cell counts of at least five, as the tests are not valid otherwise. In many cases low numbers restricted the analyses of various associations. Accordingly, where appropriate, the entire sample of caregivers was compared to the sample of non-caregivers to allow for higher numbers in the samples (controlling for age). The significance level for all Chi-square analysis was P=<.05.

The associations investigated with the chi-square tests can be misleading if observed associations are due to factors other than caregiving. For example, caregivers were, on average, older than non-caregivers. Accordingly, an association between caregiving and health status might be due to the fact that caregivers are less healthy because they are older. To address this problem, statistical methods are used to investigate if the health status of caregivers is, on average, different among persons of the same age. This is referred to as "adjustment".

We used logistic regression analyses to estimate "adjusted" associations between caregiving and health status, health system utilization, and health practices. These associations were adjusted for age, sex, education, income and marital status. We adjusted for these variables because many studies have shown that they are associated with health status and caregiving,.

The adjusted associations estimated by logistic regression are expressed as "odds ratios" (or "relative odds"). Odds ratios tell us how much higher or lower the odds of an outcome or characteristic are in one group compared to another. An odds ratio is the odds of the outcome in one group divided by the odds in another group. If the odds are the same, the odds ratio will be equal to one. For example, suppose the adjusted association between caregiving and medication use was found to be 1.2. This would mean means that the odds of medication use among caregivers divided by the odds of medication use in non-caregivers is 1.2. Because the odds ratio is greater than 1.0, this means that the odds of medication use in caregivers is larger than the odds of medication use in non-caregivers. Specifically, it is 20% higher. If, on the other hand, we obtained an odds ratio of .85, this would mean that caregivers are only 85% as likely to use medication as non-caregivers

Non-parametric median tests were used to compare values of continuous variables. These variables, for example, included hours spent working at a job and hours spent volunteering. The analyses examined differences between caregivers and non-caregivers, and between caregivers in different locations.

Throughout the results section of this report, some results were reported that are referred to as non-significant. Therefore, although these results did not reveal significant relationships, that is $p<=.05$, the authors felt that they were worth noting as a vehicle to raise issues for further research. Hence, caution should be exercised when extrapolating generalities surrounding these non-significant relationships.

6. Results

Glace Bay – Caregivers vs. non-caregivers

There were a total of 1694 completed surveys from Glace Bay, which represented an 82% response rate. Of the 1694 respondents, 57.2% were female, and over 60% were aged 45 or older, with 80% of the sample over 35 years of age. More than 40% of the respondents indicated that their household income was a least $35,000 or more per year. With respect to education level, over 50% of all respondents indicated that they had completed Grade 12, and 29.5%

reported that they had earned a university degree or community college certificate or diploma, compared with 55.4% province-wide. Of the 1694 respondents from Glace Bay, 1018 (60.1%) reported being married or living common law. Of all Nova Scotians, 40.3% were married or in common law relationships in 2002.

Unpaid caregivers represented 12.2% (206) of all the respondents from Glace Bay. These caregivers were providing care for an elderly relative or friend, or an adult child, who lived either with them or outside their home, for which they were not receiving financial remuneration. Most caregivers indicated that they were providing care for someone who lived with them. There was a significant difference in gender between caregivers and non-caregivers with women comprising the majority of the caregivers (67.5%) and 55.8% women comprising the non-caregiver's sample ($p=0.002$). There were no significant differences between the income or education levels of caregivers and non-caregivers. However, there was a significant difference in the marital status of caregivers and non-caregivers with 69.4% of caregivers reporting being married or living common-law, as opposed to 58.8% of non-caregivers ($p=0.003$). There were significant differences in age between caregivers and non-caregivers, with more than a third (34.8%) of caregivers falling within the 45-54 year age group compared to 22.4% of non-caregivers in the same age category ($p<.01$). In contrast, the proportions of caregivers and non-caregivers aged 55 and over were almost identical, at 35.5% and 34.8%, respectively.

As an indication of employment status, respondents were asked questions concerning their 'main activity.' Available responses for this question included: employed, unemployed, student, homemaker or retired. Of all caregivers in Glace Bay, 29.6% were employed, 20.9% were homemakers, and 23.8% reported to be retired. Comparatively, non-caregivers reported that slightly over 35% were employed, 13% were homemakers, and over 30% were retired. These results were significantly different from caregivers ($p=0.003$).

For the purpose of examining health status, the sample was stratified by age. Younger (aged 44 or under) caregivers perceived their health status to be poorer than non-caregivers with 21.9% of caregivers indicating poor or fair health as opposed to only 7.7% of non-caregivers, and 64.1% of non-caregivers reported their health as 'excellent' or 'very good', as opposed to only 45.3% of caregivers. This result indicated a significant difference between perceived health status of the two groups ($p <.01$). For older (aged 45+) caregivers, however, the differences in perceived health status were not significantly different from non-caregivers. While not statistically significant, logistic regression analysis yielded an odds ratio of 1.307, meaning that the odds of reporting a higher personal health rating (as opposed to a lower health rating--i.e. reporting 'excellent' or 'very good' as opposed to 'good', or 'good' as opposed to 'fair' or 'poor) were 31% greater for non-caregivers than caregivers.

Physical health was also measured by examining the results related to activity limitations. A larger proportion of younger (aged 15-44) caregivers reported having activity limitations due to long-term mental or physical health problems. That is, there were significantly more young caregivers (26.6%) that reported activity limitations than non-caregivers (12.1%, $p<.01$)). For the older respondents, however, the difference in activity limitations was not statistically significant; approximately 30% of both caregivers and non-caregivers aged 45 and older reported some activity limitations due to long-term health problems.

For the entire Glace Bay sample (both caregivers and non-caregivers), only 23.8% of the respondents reported limited activity levels. Males had significantly (38%) greater odds than females of being limited in their activities. In addition, homemakers, retirees, and unemployed respondents had significantly higher odds than employed respondents did (153%, 238%, and 349%, respectively) of having their activities limited because of health conditions. Age and low income were also contributing factors in limiting a respondent's activities. Respondents aged 45-64 (93% higher than the 65+ age group) and those in the lowest income category (132% higher than those in the $50,000+ income group) had the highest odds of being limited in their activities due to chronic health problems.

Medication use was also examined in relation to health care status. Respondents were asked to indicate their usage of a variety of drugs on a scale of daily, weekly, monthly, or never at all, of 20 prescription and over-the-counter drugs. In general, the results showed that for the majority of drugs caregivers did not differ from non-caregivers in their use of medications. However, there were some significant differences between the groups in a few of the drug types. Younger (aged 15-44) Glace Bay caregivers took more anti-inflammatory medication than non-caregivers, with 49.2% of younger caregivers taking this medication between one to seven times per week as opposed to 32.1% for the non-caregiver group ($p=.023$). The proportion of older caregivers taking painkillers daily (55.2%) was not significantly higher than that of older non-caregivers (50.0%).

There was no significant difference between caregivers and non-caregivers with respect to taking asthma medications at least once per week, 3.7% and 2.6% respectively. The responses from caregivers who reported taking asthma medications weekly were not sufficient to distinguish between older and younger respondents in this instance.

The findings also suggested that caregivers take more anti-depressant medication than non-caregivers. The results revealed that approximately twice as many caregivers (10.2%) took anti-depressants on a daily basis as compared to non-caregivers (5.6%). A larger proportion of caregivers than non-caregivers took sleeping pills on at least a weekly basis, 5.3% and 2.9% respectively. Although these differences were not statistically significant, the p-values were only slightly above our significance level. However, it should be noted that this result is based on very low numbers, since over 93% of all Glace Bay respondents reported never taking sleeping pills.

As expected, examination of the differences between caregivers and non-caregivers with respect to stress revealed that caregivers reported greater levels of stress than the non-caregiver group. The results indicated that significantly more caregivers than non-caregivers felt that they did not accomplish the things they set out to do (59.3% vs.45.9% for non-caregivers, $p<.01$), worried that they could not spend enough time with family or friends (47% vs. 36%, $p=0.003$), and felt that they were constantly under stress to accomplish more (49% vs. 34%, $p<.01$), than non-caregivers. Logistic regression analysis for stress levels revealed similar results as indicated in the cross-tabulations. That is, caregivers had significantly (155%) greater odds of reporting higher stress levels than non-caregivers. Respondents were also asked to indicate the degree of control that they felt they had over their lives. Upon analysis, the odds of reporting less control over their lives were less than half as high (47%) for non-caregivers as compared to caregivers.

There were several questions that addressed issues in relation to depression and emotional health, and asked respondents to comment on these areas for the month prior to the survey. While most (86.9%) respondents from both groups did not report that they felt sad, caregivers differed from non-caregivers on various questions relating to these issues. There was a significant difference in the proportion of caregivers (19.5%) and non-caregivers (12%) who reported feeling sad most or some of the time (p=0.015).

In addition, regression analysis revealed that non-caregivers had significantly higher odds than non-caregivers of reporting greater happiness (by 65%). Caregivers were also significantly more likely than non-caregivers to report that they were, all or most of the time, more restless (33.3% vs. 24%, p=0.009), felt more hopeless (13.1% vs. 7.1%, p=0.005), and worthless (4.5% vs. 1.5%, p=0.006). In addition, slightly over 25% of caregivers compared to 14.9% of non-caregivers reported that they felt that that "everything was an effort" (p<.01).

The respondents were also asked to indicate whether they felt depressed in the twelve months prior to the survey. The results showed that 20.6% of caregivers indicated that they felt depressed or blue in the last twelve months compared with only 15% of non-caregivers (p=.048). Again, it should be recognized that although the cell sizes were greater than five (5), the analyses were based on a low sample size. Nonetheless, the odds ratios revealed that, although not statistically significant, non-caregivers have 23% lower odds of being depressed than caregivers. Although being a caregiver did not statistically increase the odds of feeling blue or sad, the regression analysis did reveal that being unemployed, having a low income, and being aged 45-64 significantly increased the odds of being depressed for a period of two weeks or more, by 63%, 260%, and 119%, respectively. Caregivers were also less likely to report a high satisfaction with their lives. Odds ratio results indicate that the odds of reporting high life satisfaction were 73% higher for non-caregivers as compared to caregivers.

The literature suggests that caregivers may differ from non-caregivers with respect to their health behaviours and health practices. Questions concerning doctor or other health care professional visits, preventive health practices, and health behaviours were examined. Respondents were asked to indicate the number of health care visits in the last twelve months. There were significant differences between caregivers and non-caregivers in the frequencies of their contacts with physicians. The majority of non-caregivers (59.1%) had contact with a physician two times or fewer in the year preceding the survey, whereas the majority of caregivers (52.9%) had contact with physicians 3 or more times in that year (p=0.012). Caregivers were also significantly more likely to have visited a mental health professional more often in the past year (p=0.031). Although not statistically significant, more caregivers had consulted a mental health professional at least once in the past year (29.1% vs. 22.9%), and more had done so three or more times (23.8% vs. 19.9%).

Regression analysis revealed that the odds of contacting a physician more often were almost 23% lower for non-caregivers than for caregivers. Again, although not significant, it is interesting to note that caregivers have higher odds of consulting a mental health professional (by 65.3%), and visiting outpatient or emergency departments (by 46.6%) than non-caregivers. There was no difference in the odds between caregivers and non-caregivers for contacting other health care professionals.

A large proportion of all Glace Bay respondents reported that they visited a health professional less than twice in the year previous to the survey - physician (36.4%), other health care practitioner (18%), mental health professional (2.9%), or emergency/outpatient department (24.8%). Most individuals (77%) reported that they had not visited a mental health professional in the past 12 months. This result did not differ between caregiver and non-caregiver groups. Gender was a significant variable in relation to the odds of consulting a physician. That is, males had significantly lower odds than females of consulting a physician more often (by 32.9%). In addition, retirees and those respondents that reported being unemployed had significantly higher odds (by 66.2% and 54.0%, respectively) than employed respondents of consulting a physician more often.

Questions concerning health practices included questions on whether the respondents had a mammogram or pap smear, or had their blood pressure checked in the year previous to the survey. Caregivers did not differ significantly from non-caregivers with respect to their preventive health practices. Controlling for age and gender, when appropriate, the results indicated that both groups were similar with respect to whether they received pap smears and mammograms in the last year. Regression analyses also revealed that there were no differences between caregivers and non-caregivers in the odds of receiving pap smears or mammograms. Results indicated that caregivers and non-caregivers were significantly different with respect to whether they had their blood pressure checked ($p=0.037$). Accordingly, 74.5% of non-caregivers had their blood pressure checked within the last year as opposed to 86.9% of caregivers. Logistic regression results showed that non-caregivers had significantly (124%) higher odds than caregivers of not getting their blood pressure checked at least once in the year previous to the survey.

The questions concerning health behaviours also included questions on exercise and smoking behaviours. There were no differences between groups with respect to their exercise routines with 67.5% indicating that they exercised at least once per week. The results of Chi-square analyses showed that there were no significant differences in the proportion of caregiver and non-caregivers who reported smoking – 31.7% and 28.9% respectively.

Social support and community participation were also deemed important to our analyses. Respondents were asked to indicate their level of social support and their ability to participate in community activities. Questions concerning these areas included their frequency of participating in religious/spiritual and community events and their contact with neighbours and family. Caregivers and non-caregivers were similar in their attendance at religious/spiritual events. However, the results suggest that there were differences between groups with respect to their social support. The findings revealed that caregivers were more likely to have more frequent contacts with their neighbours than non-caregivers, with most caregivers (74.4%) reporting that they had contact with their neighbours at least once per week as opposed to 69.4% of non-caregivers ($p=0.048$).

Respondents were also asked questions concerning their availability for participation in community/volunteer activities. Although not significant, more caregivers (34.5%) reported that they had participated in unpaid volunteer activities in the last 12 months than non-caregivers (28.3%). Of those respondents (both caregivers and non-caregivers) that did not do any

volunteer work, the main reasons were not enough time (38.0%) and health problems (22.1%). There were no significant differences between caregivers and non-caregivers in reasons for not volunteering.

Kings County – Caregivers vs. non-caregivers

In general, the results from Kings County were similar to those of Glace Bay. The total number of surveys completed was 1859 with a response rate of 92.8%. Of the total number of respondents, nearly 55% were female and 73% were married or living with a common-law partner. Kings County respondents were slightly younger than those of Glace Bay with nearly 57% of those that responded reporting that they were 45 years and older ($p=0.008$). The most common age group in Kings County was 35-44 (24.8%), whereas the 45-54 year old age-group (24.6%) was the most common one in Glace Bay. With respect to income and education, Kings County reported slightly higher levels on both variables than did Glace Bay ($p<.01$). More than 65% of the respondents reported a household income of $35,000 or more per year, and slightly more than 40% had completed a university degree or community college diploma or certification program. These last differences may, in part, be due to the younger population of Kings County.

Of the 1869 respondents from Kings County, 221 (11.8%) reported that they were providing care without financial remuneration for a family member or friend. Similar to Glace Bay, most caregivers were women (60.9%), which was significantly different from the non-caregiver group that were 53.9% female ($p=0.051$). There were no significant differences between the marital status of either group with 72.7% of non-caregivers and 75.6% of caregivers reporting being married or living with a common-law partner. Caregivers were significantly older than the non-caregiver group, with 71.7% of caregivers reporting to be at least 45 years or older compared to less than 55% of non-caregivers in the same category ($p<.01$). There were significant differences in the household incomes of caregivers and non-caregivers. Caregivers' household incomes tended to be lower than non-caregivers', with 18.9% of caregivers reporting an income of less than $20,000 compared to only 12.8% non-caregivers in this income category ($p=0.005$). In addition, only 66.5% of caregivers reported an income of at least $35,000 as opposed to 57.0% of non-caregivers. Caregivers and non-caregivers reported similar education levels. That is, approximately 40% of both caregivers and non-caregivers reported that they had completed a university degree or community college certificate or diploma program. As an indication of employment status, respondents were asked to indicate their 'main activity.' The possible choices included employed, unemployed, student, homemaker, or retired. Results from the Kings County sample indicated that there was a significant association between 'main activity' and caregiving ($p=0.058$). In general, caregivers were less likely to be employed (46.1% vs. 50.9%) and more likely to be retired (27.9% vs. 22.8%) than non-caregivers.

Kings County respondents were asked the same questions as Glace Bay respondents concerning their perceived health status, health behaviours and practices. Similar to Glace Bay respondents, young (aged 15-44) caregivers and non-caregivers differed significantly with respect to their perceived health status. While 14.5% of young caregivers reported poor to fair health status, only 8.7% of young non-caregivers fell in this category. Additionally, 64.7% of young non-caregivers and only 48.4% of young caregivers reported that their health status was very good or

excellent (p=0.034). These differences occurred between older (aged 45+) caregivers and non-caregivers as well, with 44.3% of non-caregivers reporting 'very good' or 'excellent' health as opposed to only 39.4% of caregivers. However, for older respondents, these differences were not statistically significant. The results of the regression analysis revealed that non-caregivers had significantly higher (41.3%) odds as compared to caregivers of reporting better health.

As an indication of health status, medication use and the effect of chronic health conditions on activity levels were also examined in our analyses. The results indicated that 'limited activity' was a significant problem for younger caregivers, with 21.3% reporting that they had limited activity due to chronic mental/physical health problems compared to only 10.0% of non-caregivers (p=0.007). Although a larger proportion of older (aged 45+) caregivers reported activity limitations (26.6% vs. 23.7% of older non-caregivers), this difference was not significant.

In general, Kings County caregivers were similar to non-caregivers in their use of medication for most drug types. However, there were some differences. Significantly more young (age 15-44) caregivers than non-caregivers (39.4% vs 34.7%) used anti-inflammatory at least weekly (p=0.031). There were also significant differences in the use of sleeping pills between groups, with more than twice as many caregivers as non-caregivers (9.6% vs. 3.8%) who reported taking sleeping pills on a daily and weekly basis (p=0.050). Low cell counts here prohibit controlling for age. Kings County caregivers also reported taking more stomach remedies than non-caregivers, with nearly 12% of caregivers who reported taking stomach remedies daily, compared to only 7% of non-caregivers (p=0.05). Again, low cell counts for stomach remedy use prohibit additional subcategorizing of the respondents by age.

Results from questions concerning respondents' stress levels were also analyzed for Kings County. Similar to Glace Bay, Kings County caregivers often felt that they could not accomplish what they wanted (62%) as compared to 52.2% of non-caregivers (p=0.006). Also, 49.3% of Kings County caregivers felt that they did not have enough time to spend with family/friends as opposed to 39.5% of non-caregivers (p=0.006). In addition, caregivers felt that they were constantly under stress to accomplish more compared to non-caregivers (47.5% vs. 35.4%; p=0.001). Similarly, non-caregivers had 38% lower odds than caregivers of rating their lives more stressful. That is, caregivers had significantly greater odds of rating their lives more stressful than non-caregivers. For the purpose of this analysis, the level of control over ones life can reflect feelings of stress.

The results revealed significant differences in indicators of emotional health between Kings County caregivers and non-caregivers. The findings from Chi-square analyses indicated that a higher proportion of caregivers were nervous (26.1% vs. 18.5%, p=0.03) and felt worthless (10.7% vs. 5.7%, p=0.001) at least some of the time as compared to non-caregivers. Caregivers did not differ from their non-caregiver counterparts with respect to feelings of hopelessness or restlessness, or with feeling that everything was an effort. Also, caregivers did not differ significantly from non-caregivers with respect to feeling sad or blue within the year previous to the survey (16% and 12.6%). Although not significant, non-caregivers had lower odds (by 19.7%) than caregivers of reporting a two-week period of depression or sadness in the year

preceding the survey. Conversely, non-caregivers had significantly (by 48%) higher odds as compared to caregivers of reporting greater happiness in their lives.

For the purpose of these analyses, the number of times respondents visited a health care professional was considered to be an indication of health system usage. Kings County caregivers and non-caregivers did not differ significantly in frequency of health care visits. That is, caregivers did not contact health care professionals significantly more (or less) than non-caregivers. Similarly, regression analyses revealed that there was no significant difference between caregivers and non-caregivers in their odds of contacting a physician or other health care professionals more frequently than non-caregivers.
The sample of Kings County respondents indicated that a large proportions visited doctors (43%), other health care professionals (28.7%), emergency or outpatient departments (25.2%), and mental health professions (2.88%) no more than twice per year.

Questions on health behaviours and practices, including preventive practices, were also asked of the Kings County respondents. Female caregivers and non-caregivers, controlling for age, reported similar patterns of preventive health practices. Likewise, the results of the odds ratios showed that for females, there were no significant differences between caregivers and non-caregivers in the odds of having had a pap smear or mammogram in the year previous to the survey. The results revealed that that there was a similar pattern for caregivers and non-caregivers with respect to having their blood pressure checked.

Exercise activities and smoking behaviours were also examined as indicators of health behaviours. Chi-squared test results showed that, between caregivers and non-caregivers, there were no significant differences with respect to their exercise activities. Similarly, the odds ratio of 0.968 indicates that caregivers and non-caregivers had nearly identical odds of participating in exercise. The analyses of smoking behaviours revealed that there were no significant differences between the groups with 17.2% of non-caregivers smoking at the time of the survey as compared to 21.5% of caregivers.

As previously explained, social support and community participation were considered important issues for these analyses. These areas comprised questions concerning the respondent's ability to participate in religious/spiritual and community events. The results revealed that there were no differences between caregivers and non-caregivers with respect to the frequency with which they attended spiritual/religious functions. However, there were significant differences between the groups with respect to their contact with relatives who did not live with them; eighty percent of Kings County caregivers responded that they had contact with their relatives at least once per week as opposed to only 73% of non-caregivers ($p=.050$). However, there was no significant difference between the groups with respect to contact with their neighbours. Similar to Glace Bay respondents, the results showed that both caregivers and non-caregivers in Kings County participated equally in volunteer activities. However, caregivers more than non-caregivers reported that time constraints and health problems were the major reasons why they did not participate more in volunteer work.

Comparison of Caregivers

The total number of respondents for both Kings County (1874) and Glace Bay (1694) was 3568. In general, for the total sample, the respondents were similar in both communities by gender – 57.2% female for Glace Bay and 55.1% in Kings County. The results indicated that there were significant differences between the two communities with respect to marital status. That is, 72% of the total sample in Kings County indicated they were married as opposed to only 60.2% in Glace Bay ($p<.01$). In addition, there were significant differences with respect to income, education level, employment status, and age.

Overall, Kings County respondents were more likely to be employed (50.2%) than those in Glace Bay (34.5%; $p<.01$). In addition, a higher proportion of Glace Bay (29.9%) respondents reported being retired than those in Kings County (23.6%). However, Kings County respondents tended to be slightly younger than those of Glace Bay and this could have accounted for the differences.

From a range of answers – employed, unemployed, student, homemaker or retired- respondents were asked to indicate their 'main activity.' Of the entire caregiver sample, most caregivers indicated that they were either unemployed (38.1%) or retired (25.9%) or homemakers (17.7%). However, there were significant differences in the employment status of caregivers between the two communities. A higher proportion of caregivers in Kings County were employed (46.1%) or retired (27.9%), as opposed to Glace Bay, where 29.6% of caregivers were employed and 23.8% were retired ($p<.01$).

There were no significant differences in the proportion of caregivers in each community. The results indicated that there were 206 caregivers in Glace Bay and 221 in Kings County representing 12.1% and 11.8% of the sample, respectively. In addition, caregivers were similar with respect to gender and age with women representing 57.5% of caregivers in Glace Bay and 60.9% in Kings County. Most caregivers (70.2% across both communities) reported that they were over 45, as compared to 57.2% of non-caregivers. However, there were significant differences between the two communities with respect to caregiver's household income ($p=0.008$). Nearly 42% of caregivers in Kings County reported an income below $35,000, while slightly over 59% reported being in the same household income category in Glace Bay ($p=0.01$).

There were no significant differences in the education levels between caregivers in the two communities. However, there were a higher percentage of caregivers in Kings County who reported they had completed university or community college than in Glace Bay - 39.7% and 29.6% respectively. Of all 427 caregivers, most were married or living in a common-law relationship (72.6%) which did not reflect a significant difference between the communities with respect to the marital status of caregivers.

Caregivers in both communities reported similar health status, with 41.8% of caregivers in Glace Bay reporting excellent or very good health and nearly 41% in Kings County reporting the same health status. An examination of activity limitations due to a chronic health problem as an indicator of health status was incorporated in our analysis of caregivers. Again, there were no significant differences between caregiver groups with respect to their 'limited activity levels due to physical/mental health problems' and this was similar for the both community caregiver

samples. Only 27.6% of all caregivers reported that they had limited activity due to a long-term illness. However, regression analysis revealed that for the entire sample of respondents from both communities, non-caregivers had significantly higher (37.5%) odds than caregivers of reporting better health. Furthermore, non-caregivers had significantly lower odds (by 23.6%) than caregivers of being limited in their activities due to a chronic health problem.

Respondents were asked to indicate, from a list of possible chronic health problems, the disease(s) from which they suffered. For the entire sample of caregivers and non-caregivers in both communities, the five most reported chronic diseases were: arthritis/rheumatism; high blood pressure; back problems excluding arthritis; allergies excluding food allergies; and, migraine headaches. However, the results suggested that caregivers were more likely to suffer from certain types of chronic diseases compared to non-caregivers. That is, twice as many caregivers suffered from migraine headaches, stomach or intestinal disorders, and urinary incontinence than non-caregivers, and nearly three times as many caregivers as non-caregivers suffered from bowel disorders.

Respondents' medication use was also examined as an indicator of health status. In general, caregivers in Kings County did not differ from Glace Bay with respect to their medication use. The results indicated that, for both groups of caregivers, they used anti-flammatories (49.9%) tranquilizers (3.6%), heart medicine (7.8%), sleeping pills (7.6%), and stomach remedies (17.6%), between one and seven times per week. Nonetheless, there were some differences with a few of the drugs listed. Although the results did not appear to be significant, Glace Bay caregivers used anti-depressant medications twice as much on a daily basis as Kings County caregivers, 10.2% and 4.8% respectively. There were no differences between groups with respect those caregivers who took anti-depressants on a weekly or monthly basis, or those that reported never taking them at all. In comparison to this result, there was a difference between Kings County and Glace Bay caregivers with respect to asthma medication use. The results indicated that Kings County caregivers (7.6%) used asthma medication on a daily basis over twice as much as Glace Bay caregivers (3.2%). Again, the results were not significant. However, there were significant differences in the use of blood pressure medication between caregiver groups. Glace Bay caregivers used blood pressure medication more often than Kings County, 29.6% and 17.1% respectively ($p=0.011$).

The results showed that there were no differences between caregivers on indicators of both stress and emotional health. In general, both groups felt similar with respect to their feelings of: sadness (2.6%); nervousness (5.6%); restlessness (6.7%); hopelessness (2.7%), worthlessness 6.9%), and feelings that everything was an effort (6.9%), all or most of the time. In fact, between 70.5% and 89.5% of all caregivers reported that they did not experience these feelings. Although there were no between caregiver group differences with respect to stress, the results revealed that many caregivers were stressed. For the entire sample of Glace Bay and Kings County, caregivers had higher odds of reporting less control in their lives than non-caregivers. For all caregivers, 60.7% reported that they could not accomplish what they wanted, 48.2% indicated that they worried that they did not spend enough time with their family or friends, or that they were constantly under stress trying to accomplish more.

The results concerning the respondent's happiness in their lives were also considered an indication of emotional health. The odds ratio results revealed that, for the entire sample of both communities, non-caregivers had significantly higher odds (by 55%) of reporting happiness in their lives than caregivers. For all respondents in both Kings County and Glace Bay, there was no difference in the odds of reporting happiness in their lives between the two communities.

Health system use, health behaviours and practices were examined controlling for age and sex where appropriate. These questions included doctor or other health care professional visits, preventive health practices, and healthy/high risk behaviours. Glace Bay caregivers reported that they visited their physicians significantly more often than Kings County caregivers (p=0.004). Thirty-seven percent of Glace Bay caregivers reported that they visited their physician "3-12 times per year" while only 30% of Kings County indicated this. The values for visiting their physicians were collapsed and after this procedure it was revealed that three times more Glace Bay caregivers than Kings County caregivers visited their physicians equal to or more than thirteen times per year (15.5% and 5.7%, p=0.004).

Consistently, Glace Bay caregivers visited other health care professionals, mental health professionals, and emergency/outpatient departments significantly more often than Kings County caregivers (p=<.01 to p=0.010). In addition, there were significant differences between caregiver groups with respect to 'being sick in bed more than a day' with 21.8% of Glace Bay and 5.7% of Kings County caregivers reporting being ill enough to be in bed for more than a day (p=0.001).

With respect to examining the between community samples (the entire sample), the results were unlike those of the between community caregiver samples. In fact, the odds ratio revealed that as a whole, Kings County respondents had similar odds of visiting their physicians as Glace Bay. Furthermore, for the total sample of caregivers and non-caregivers, odds ratios analyses showed that, non-caregivers had significantly lower odds (by 83.2%) than caregivers for the number of times they contacted a mental health professional. Analysis of the entire sample revealed that non-caregivers had significantly lower odds (by 27.5%) than caregivers of visiting an outpatient department or hospital emergency than caregivers. Again, it is cautioned that these numbers, in some cases, are based on low cell counts. Every effort has been made to collapse categories in order to provide a higher cell count, and no cell with a count of less than five has been reported.

An examination of health practices and behaviours revealed that both groups of caregivers were very similar on these indicators. Both caregiver groups indicated that they had mammograms (63.3%) and pap smears (60.8%) within the last year. In addition, there were no between group differences with respect having their blood pressure checked. Nearly 13% of all caregivers reported that they had their blood pressure checked with the last 12 months. However, odds ratios revealed that non-caregivers had significantly lower odds (by 38.2%) than caregivers of not having had their blood pressure checked in the year previous to the survey. Upon examination of respondents' exercise patterns, caregivers reported similar exercise behaviours. That is, 27.4% of caregivers exercised greater than three times per week, 38.2% one to three times per week, and 34.4% less than once week. In addition, there were no differences in the exercise patterns caregivers and non-caregivers for the total sample. However, respondents from Glace Bay had significantly (22%) higher odds than those of Kings County of exercising more.

Smoking patterns were also considered as part of the analyses of health behaviours. The results indicated that caregivers in Glace Bay (31.7%) smoked significantly more on a daily basis than caregivers in Kings County (21.5%, $p=0.050$). Logistic regression results showed that, for the sample as a whole (both caregivers and non-caregivers), Glace Bay respondents had significantly higher (by 55.8%) odds of smoking than those of Kings County.

Social support and caregiver's ability to participate in voluntary activities were also germane to our analyses. Results were significant between caregiver groups for those respondents who were in contact with family members who did not live with them ($p=0.020$), and for frequency of contact with neighbours ($p<.01$). Glace Bay caregivers reported that they had more contact with neighbours and relatives than Kings County caregivers. Eighty-three percent of caregivers in Glace Bay reported having contact with relatives at least one to seven times per week as opposed to 80% of Kings County caregivers. However, when questioned about their contact with neighbours the results showed a larger difference between groups. Nearly 85% of Glace Bay caregivers reported that they visited their neighbours at least one to seven times per week as compared to 64.4% of Kings County caregivers. With respect to volunteer work, a higher proportion of Kings County caregivers (52.5%) reported that they volunteered for an organization in the last twelve months, compared to only 34.5% of Glace Bay caregivers. However, both groups of caregivers similarly reported that the main reasons for not volunteering were lack of time (69%) and health problems (15.4%).

7. Time-Use, Caring and Health

Increasingly, researchers and policy makers are recognizing the importance of time in understanding quality of life. Traditionally, the focus on time has been on time spent in paid work, deemed to be the essence of productive activity. However, it is now clear that that focus omitted a very important component of productive time, time allocated to housework childcare and volunteer activities. Just as paid work produced goods and services that contributed to well being, the omitted activities also made a very significant contribution.

Four major uses of time can be identified. These include contracted time, committed time, necessary time, and free time. Contracted time refers to time engaged in as part of a contract for employment or as time allocated to educational activity. Committed time refers to time allocated to maintaining family commitments such as meal preparation, housekeeping, or household maintenance. Necessary time is time required for self- maintenance such as eating, sleeping, resting and personal activities. Time that does not fall into these three categories is denoted free time. Examining these four types of time use can provide considerable insight into the lives of individuals.

First, it will be noted in Table 1 and Table 2 that contracted or paid work time appears relatively low on a daily basis. The reason for this is that the time is calculated as an average day over seven days of the week even though workers typically work only five. Also, the work time presented is an average over the total population while typically only a portion of the population

is engaged in the labor force. If 60% of the population was in the workforce and they worked a five-day week, one would expect there to be 42% (.60 times .70) of the population engaged on an average day. In Kings County 43% were engaged in paid work on an average day while in Glace Bay only 29% were so engaged. These realities account for the low average daily time allocated to contract work in both sites and the considerably low value for Glace Bay.

In the following tables we examine, for both Glace Bay and Kings County, the impact of two life situations on the time use of men and women. The first shows the impact of having children, and hence the necessity of caring for them, on the four categories of time use. The second shows how the respondent's health contributes to, or is affected, by their use of time.

In Glace Bay, males with children allocated about 10.5 hours per day to necessary (personal) activities, 2.3 hours to contracted work, and 3.1 hours to committed time, with 6.4 hours of free time per day. In contrast, women with children devoted 11 hours to necessary time, 1.9 hours to contracted time, 4.4 hours to committed time, and had 5.4 hours of free time. In Glace Bay, the presence of children had no significant affect on the contracted or work time of respondents of either gender. However, children did significantly increase the committed and, hence, total productive time of both males (about 1 hour per day) and females (about 1.5 hours). As a consequence, the free time of both males and females was reduced by about an hour per day.

There was a clear association, in Glace Bay, between one's perceived state of health and their contracted work time. Individuals perceiving their health as very good or excellent, worked in paid work one and a half hours or more per day more than did those who perceived their health to be good, fair or poor. However, for men the difference was fully accounted for by reduced participation in work on diary day. In contrast, while there was reduced participation in paid work on diary day by women, those women who did work averaged a half hour less paid work per day. Also, individuals perceiving their health as being good, fair or poor, allocated approximately one-half hour more than respondents citing very good or excellent health, to committed (domestic) work. Similarly, they allocated approximate one-half hour more to free time activities and significantly more time (4/10ths of an hour for men and 8/10ths of an hour for women) to necessary activities.

In Kings County the presence of children had no significant effect on the allocation of necessary time or free time by either males or females, as shown in Table 2. This is contrary to the situation in Glace Bay. Also, contrary to Glace Bay, the presence of children significantly reduced the time allocated to contracted (paid work) in Kings County. The presence of children reduced males work time by an average of 4/10 of one hour per day and females paid work time by 1.3 hours per day. Total productive time was increased for both males and females. However, only in the case of females was the increase statistically significant.

With respect to the impact of perceived health on time allocation, the pattern follows very closely that observed in Glace Bay. Those in excellent or good health spend less time on necessary activities and on free time activities, more time on contracted activities and significantly more time on productive activities. The only deviation from the Glace Bay pattern is the fact that this group spends significantly less time on committed activities. There is no significant difference in time allocated to committed activities by this group. See Table 2.

Table 1. Time-use, Caring and Health: Glace Bay

Time (Hours)		Do you have children? Yes	No	Respondents Health Very Good/ Excellent	Good/ Fair/Poor
Necessary Time	Male	10.5	10.9*	10.4	10.8*
	Female	11.0	10.9	10.6	11.4*
Free Time	Male	6.4	7.3*	6.3	6.9*
	Female	5.4	6.7*	5.4	5.9*
Contracted Time	Male	2.3	2.5	3.2*	1.7
	Female	1.9	2.2	2.9*	1.1
Committed Time	Male	3.1*	1.9	2.6	3.0*
	Female	4.4*	2.7	3.7	4.3*
Total Productive Time	Male	5.4*	4.3	5.7*	4.6
	Female	6.2*	4.8	6.6*	5.3

* Significant difference at .05 level of significance.

Table 2. Time-use, Caring and Health: King's County

Time (Hours)		Do you have children? Yes	No	Respondents Health Very Good/ Excellent	Good/ Fair/Poor
Necessary Time to	Male	10.6	10.6	10.4	10.9*
	Female	11.0	11.2	10.8	11.4*
Free Time	Male	5.4	5.7	5.1	5.9*
	Female	5.2	5.4	5.0	5.6*
Contracted Time	Male	4.3	4.8.*	5.1*	3.7
	Female	2.6	3.9*	3.4*	2.3
Committed Time	Male	2.6*	1.8	2.3	2.5
	Female	4.2*	2.5	3.8	3.9
Total Productive Time	Male	6.9	6.6	7.4*	6.2
	Female	6.8*	6.4	7.2*	6.2

* Significant difference at the .05 level of significance.

8. Discussion

The purpose of this report was to examine caregiver characteristics, health status, and health behaviours and practices in two Nova Scotian communities. Compared to other surveys of this kind, such as the Nova Scotia Health Survey and the General Social Survey, actual numbers of caregivers were high in relation to the population (211 in Kings County, and 206 in Glace Bay).

Despite these numbers, there were some difficulties encountered with cell sizes being below five. Therefore, where appropriate, values were re-coded to allow for more robust analyses.

Caregivers

There have been various studies describing the characteristics of caregivers. For this study, the caregivers from each community were examined for similarities and differences on a variety of demographic variables that allowed a profile of caregivers to be created. Our results indicated that 11.8% of the sample of Kings County (KC) and 11.8% of Glace Bay (GB) respondents were caregivers. These proportions are similar to those of a Canadian study by Cranswick (1997) who reported that 12.06% of the Canadian population provided unpaid care to someone with long-term health problems. The proportion of women to men caregivers was slightly lower in our sample (67.48%-GB and 60.91%–KC) for both communities than the reported 69% in the Canadian study. Additionally, the caregivers in our sample were older than the national sample.

Caregivers in both communities reported similar education levels with most completing high school, and slightly more completing university and community college in Kings County as compared to Glace Bay. However, there were some differences between the communities. Most caregivers reported being unemployed, retired or homemakers, with caregivers in Kings County showing higher proportions of the sample being employed and retired. Caregivers in Kings County were also slightly younger as compared to those of Glace Bay. Caregivers in Kings County reported slightly higher income levels, but the lower employment rate and slightly older population in Glace Bay may explain this.

In summary, most caregivers from both communities were women over 45 years of age, and were married or living in a common-law relationship, and these results are similar to the national findings. These results partially supported 'hypothesis 1' that caregivers were more likely to be female, and married, and in an older age group. However, 'hypothesis 1a.' was not supported in that caregivers from both communities were similar in age. Many caregivers reported a variety of main activities; the majority of caregivers were unemployed, retired, or homemakers with less than 50% reporting that they were employed. However, we hypothesized that caregivers would have lower income and education levels than non-caregivers and this was not supported by our results. Caregivers and non-caregivers had similar education and income levels. In addition, the fact that nearly 50% of caregivers were employed was also higher than expected.

Health Status

The burden of caregiving has long been recognized as an important issue in relation to the health outcomes of caregivers. Caregiver's adverse psychological and physical outcomes due to their caregiving responsibilities have been supported in some studies. Our results also provide support that caregivers have significantly lower perceived health status than non-caregivers. Furthermore, these results were consistent between the two communities with caregivers in both communities reporting a lower perceived rating of health.

Germane to our study of health status is caregivers' limited activity levels imposed by chronic health problems as a reflection of physical health. Our results supported the notion that caregivers have more activity limitations than non-caregivers, and this may reflect poorer physical health status. Nonetheless, we could not determine in this study whether these limitations were a result of their caregiving responsibilities or had been present prior to assuming their caregving responsibilities.

Many studies refer to negative emotional and mental health effects on caregivers in relation to the burden of caregiving. Our results support the view that caregivers have higher stress levels than non-caregivers. In fact, the findings revealed that caregivers experienced feelings of nervousness and worthlessness, and felt more stressed and time pressured than non-caregivers. In addition, our findings suggested that non-caregivers had higher odds of reporting happiness in their lives than caregivers. These findings are similar to those by George and Gwyther who found that caregivers experienced three times more stress than a comparison population. The findings of this study are comparable to those of others that report on the negative emotional health (Snow-Spracklin, 1998) of caregivers due to their caregiver responsibilities.

Medication can also mirror factors associated with health status. Although there appeared to be a dearth of literature surrounding medication use and caregiving, we believe that the results found in this study are an important issue for future caregiver research. In general, caregivers used more anti-inflammatory medication, anti-depressants, sleeping pills, stomach remedies, and asthma medications than non-caregivers. It could be maintained and certainly not too presumptive to suggest, that these findings may be reflective of high stress levels and perceived poorer emotional health reported by caregivers in both communities.

Between the communities, caregivers in Glace Bay reported using more anti-depressants than Kings County. Comparatively, Kings County caregivers used asthma medications nearly twice as much on a daily basis than Glace Bay caregivers. Although we were unable, from the data available, to examine associations to explain the difference associated with asthma medications, it may be due to environmental factors rather than being a caregiver.

In summary, our findings partially support 'hypothesis 2' in that caregivers report poorer emotional health with respect to stress and other factors than non-caregivers. Nonetheless, 'hypothesis 2', in part, was not supported by our results. That is, caregivers did not report similar physical health status than non-caregivers. Our findings suggested that caregivers reported more physical limitations than non-caregivers, although the reason for these limitations could not be credited to their caregiving responsibilities. In addition, caregivers reported higher use of medications associated with emotional or psychological health issues compared to the non-caregiver population. This idea coincides with our findings that caregivers have high stress levels and report more emotional health issues than our comparable population.

Health Care Utilization

Many studies have suggested the idea that a higher level of morbidity in caregivers could translate into higher health care utilization. Few studies have thoroughly investigated this

question. Of those that have the majority appear to find that, in general, caregivers do not visit their physician more often than a comparative population. However, stratifying by types of physicians or health care workers it appears that caregivers visit psychiatrists and internal medicine consultants more often than comparable non-caregivers (Baumgarten et al. 1997). Our findings also supported the notion that, in general, caregivers and non-caregivers did not differ with respect to their health care utilization and this was similar in both communities. Nonetheless, our findings did indicate that, although not significant, there appeared to be a tendency for caregivers to have higher odds of visiting health care professionals and emergency/outpatient department, or staying overnight in a health care facility, more frequently than non-caregivers.

However, when the entire sample of caregivers and non-caregivers was examined it revealed that caregivers visited mental health professionals more frequently than non-caregivers. These findings are quite similar to those of Baumgarten in that she found that caregivers visited psychiatrists more often than non-caregivers.

Between community results for the entire sample also revealed conflicting results. The results indicated that, as a whole, the frequency of physician visits was similar for Kings County and Glace Bay respondents. However, odds ratios revealed that Glace Bay had lower odds of visiting other health care providers than Kings County. This result may be indicative of the differences in the types of health care services in the communities. As explained in the community descriptions, the community of Kings County is slightly larger and has more access to a variety of health care services than Glace Bay, which is more isolated. Furthermore, the between community caregiver sample analysis revealed that, controlling for age, Glace Bay caregivers reported that they visited their physicians and other health care professionals more often than Kings County.

On the surface, similar heath care visiting patterns between caregivers and non-caregivers appears to be contradictory to our findings that caregivers report poorer health status than non-caregivers. That is, based on their reported poorer health status, it would be reasonable to assume that caregivers would have a higher frequency of visiting health care professionals. However, there are several plausible explanations for these findings. First, we did find that caregivers are stressed and feel that they cannot accomplish what they feel they need to, and therefore it could be assumed that they may not have time to visit their health care provider more than they indicated. Consequently, caregivers would not show a higher frequency of visits. Second, caregivers may feel that their symptoms could not be alleviated by professional treatment, and therefore, do not seek help. Third, it could be suggested the responsibilities of caregiving can reflect an implicit selection process in that only those people that become caregivers are those that are physically and mentally capable of maintaining a caregiving role. Therefore, those people that require high levels of health care utilization either give up, or never undertake, caregiving responsibilities. Of course, frequency of visits to health care providers may always depend on the types of health care services available in a given area. A lack of physician services could also account for the inability of caregivers to seek medical care. Although we were not able to control for this confounding factor, future research should consider the resources available in the community under study.

In general, our results supported 'hypothesis 3' in that caregivers and non-caregivers had similar health care utilization patterns. However, when investigating the between community differences, the results supported 'hypothesis 2a' in that Glace Bay caregivers utilized health care services more frequently as compared to Kings County, and this held true when controlling for age. Additionally, our results also indicated that Glace Bay reported higher utilization rates than Kings County with respect to visits to mental health professionals. It is suggested that further study in this area could address some of the reasons why caregivers' reported poorer health status is not reflected in their utilization patterns and the types of services available in the specific areas.

Health Behaviours

Our results indicated that, with only one exception, there were no differences between caregivers and non-caregivers with respect to preventive health behaviours. The only exception to this finding is that Glace Bay non-caregivers had their blood pressure checked more often than caregivers, and only a small portion of the entire sample indicated this. Consequently, we can conclude that 'hypothesis 4' was supported by our results. These results were similar to those found by Scharlach (1997) who investigated differences between caregivers and a comparison group on a variety of health behaviours such as exercise, nutrition, and smoking. Nonetheless, the between caregivers group analysis revealed that caregivers in Glace Bay smoked more frequently than Kings County, but that Glace Bay caregivers exercised more often than Kings County.

Social Support

Social support as an intervening factor in caregiver emotional health has been investigated by Snow-Spracklin (1998). Studies examining social support in caregiver's lives vary because of the conceptualization of social support. For the purposes of our study we examined associations with the caregivers ability to: (1) partake in community and religious events; (2) visit/contact with neighbours; and, (3) to visit/contact relatives who did not live with them. According to our results both caregivers and non-caregivers participated in religious events and community volunteer activities in similar patterns. Nonetheless, between caregivers, Kings County caregivers were able to participate in voluntary activities more often than Glace Bay caregivers. Both groups indicated that they did not participate in voluntary activities because of health problems and lack of time. However, differences were revealed in the respondents' relationships to their neighbours. Glace Bay caregivers had contact with their neighbours more frequently than non-caregivers. Kings County caregivers had more frequent contact with relatives than non-caregivers. Between communities, caregiver differences indicated that Kings County had far less frequent visits with neighbours than Glace Bay.

From our results, it appears that all caregivers suffer from high levels of stress. Additionally, each community appears to have a unique method in which to seek social support, and this could act as an intervening factor in ameliorating stress for caregivers. We conclude that the types of social support used in each community vary. Glace Bay caregivers utilize neighbours more than

Kings County and, and Kings County seek family or relatives more than Glace Bay. Several factors could account for these findings. Keefe and others found that rural caregivers use more informal supports than urban caregivers. Both these communities are considered rural areas of Nova Scotia and may not have formal services available as would be in the larger centres. Additionally, lack of transportation my also be a factor in the types of social support caregivers choose, or have to rely on, to relieve the burden associated with their caregiver responsibilities. Consequently, our results may be a reflection of caregivers using the informal supports of family and friends to alleviate stress and caregiver burden. These results may reflect the varying culture and family structures in each community. Additionally, Glace Bay has higher unemployment rates and an older population than Kings County. Some of these findings may reflect the out-migration of young people to seek employment in larger centers, and therefore are not available as a support to their family. Consequently, Glace Bay caregivers may have to rely on neighbours rather than family for their social support.

In summary, caregivers appear to rely on informal resources for social support. These social support patterns manifest themselves in a variety of ways in each community. However, we have also shown that caregivers use mental health services more than non-caregivers that may be an indication that some caregivers do access professional services to alleviate stress, or for other emotional health issues.

9. Suggestions for future research

One of the limitations of this study was the small numbers of caregivers and consequently the small cell sizes associated with it. When possible, values and groups were collapsed to allow for more robust analyses. However, much of the information gleaned from our results appears to compare to other national studies. Future research should include factors associated with: the resources available to caregivers in the communities under study; specific factors associated with the care-receiver's illness; the length of time in the caregiver role; and, the caregiver's health status before the caregiver role was undertaken.

10. References

Anderson, C.S., Linto, J., Stewart-Wynne, E.G. (1995). A population-based assessment of the impact and burden of caregiving for long-term stroke survivors. *Stroke, 26(5).*

Armstrong, P. Kits, O. (2001) *Hundred years of caregiving.*
Commissioned by the Law Commission of Canada.

Bass, D.M., Noelker, L.S. (1996). The moderating influence of service use on negative caregiving consequences. *Journal of Gerontology: Social Sciences*, 51B(3).

Baumgarten, M. (1989) The health of persons giving care to the demented elderly: a critical review of the literature. *Journal of Clinical Epidemiology,* 42 (12), 1137-48.

Baumgarten, M., Battista, R.N., Infante-Revard, C., Hanley, J.A., Becker, R., Gauthier, S. (1992). The psycholigal and physical health of family members caring for an elderly person with dementia. *Journal of Clinical Epidemiology, 45(1).*

Baumgarten, M., Battista, R.N., Infante-Revard, C., Hanley, J.A., Becker, R., Bilker, W.B., Gauthier, S. (1997). Use of physician services among family caregivers of elderly persons with dementia. *Journal of Clinical Epidemiology, 50(11).*

Beach, S.R., Shultz, R., Yee, J.L., Jackson, S. (2000). Negative and positive health effects of caring for a disabled spouse: longitudinal findings from the caregiver health effects study. *Psychology and Aging, 15(2).*

Beigel, D.E., Milligan, S.E., Putnam, P.L., Song, L. (1994). Predictors of burden among lower socioeconomic status caregivers of persons with chronic mental illness. *Community Mental Health Journal,* 30(5).

Bull, M. (1990). Factors influencing family caregiver burden and health. *Western Journal of Nursing Research, 12(6).*

Campbell, J., Bruhm, G., Lilley, S. (1998). *Caregivers' support needs: insights from the experiences of women providing care in rural Nova Scotia.* Maritime Centre of Excellence for Women's Health, Halifax, NS.

Canadian Study on Health and Aging (1994). Patterns for caring for people with dementia. *Canadian Journal on Aging,* 13(4), 470-87.

Chappell, N.L. and Litkenhaus, R. (1995) Informal caregivers to adults in British Columbia. *Joint Report of the Centre on Aging, University of Victoria and the Caregivers Association of British Columbia.*

Cheal, D. and Kampen, K. (1998). Poor and dependent seniors in Canada. *Aging and Society,* 18(2).

Cochrane, J.J., Goering, P.N., Rogers, J.M. (1997) The mental health of caregivers in Ontario: an Epidemiology survey. *American Journal of Public Health,* Dec, 1987, 12, 2002-7.

Cohen, C.A., Gold, D.P., Shulman, K.A., Zucchero, C.A. (1994). *Canadian Journal on Aging*, 15.

Colantonio, A., Kositsky, A.J., Cohen, C., Vernich, L. (2001) What do caregivers of elderly want? results from the Canadian Study on Health and Aging. *Canadian Journal of Public Health, 92(5).*

Coyte, P.(2000). Home care in Canada: passing the buck. Report funded through the Atkinson Foundation through the project "Dialogue on Health Reform."

Cranswick, K. (1997) Canada's Caregivers. *Canadian Social Trends.* Winter, Statistics Canada, Catalog no. 11-008-XPE.

Duxbury, L. Higgins, C. (2001) Work-life balance in the new millennium: Where are we? Where do we need to go? *Ottawa:Canadian Policy Research Paper No. W/12.* October.

Economic Justice Report. (1997). *Out of the shadows: policy principles to recognize women's unpaid work.* Ecumenical Coalition for Economic Justice, 8 (3).

Family Cargiving in the US: findings from a national Survey (1997). *The National Alliance for caregiving Bethesda, MD and the American Association of Retired Persons, Washington, DC.*

Fast, J.E. & Frederick, J.A. (1999). Informal caregiving: is it really cheaper? Paper presented to the *International Association of Time Use Researchers Conference.* England.

Fast, J. and Keating, N. (2000) Family caregiving and consequences for carers: toward a policy research agenda. *Canadian Policy Research Network Discussion PaperNo F/10.*

Gallicchio, L., Siddiqi, N., Langenberg, P., & Baumgarten, M. (2002). Gender differences in burden and depression among informal caregivers of demented elders in the community. *International Journal of Geriatric Psychiatry,* 17.

George, L.K. & Gwyther, L.P. (1986). Caregiver Well-being: A multidimensional examination of family caregivers of demented adults. *The Gerontological Society of America,* 26.

GPI Atlantic (1998) The economic value of unpaid housework and childcare in Nova Scotia. Halifax.

Grunfield, E., Glossop, R., McDowell, I., Danbroook, C. (1997). Caring for the elderly at home: the consequences to caregivers. *Canadian Medical Association Journal,* 157.

Guberman, N. (1999) *Caregivers and caregiving: new trends and their implications for policy.* Prepared for Health Canada.

Health Affairs. Published by Project HOPE. For copies contact Christina Danford at Health Affairs or the website: www.healthaffairs.org.

Haley, W.E. and Pardo, K.M. (1987) Relationshipof stage dementia to caregivers stress and coping. *Presented at the American Psycholigal Association Meetings,* New York, August.

Jaffe, J., Blakley, B. (2000) *Coping as a rural caregiver: the impact of health care reforms on rural women informal caregivers.* Prairie Women's Health Centre of Excellence, Project #1, Saskatechewan.

Keefe, J. (1999). The nature of caregiving by community context: a profile of informal caregiving in Canada's rural and urban areas. *Final Report prepared for Health Canada.*

Keefe, J. and Fancey, P. (1998). Financial compensation versus community supports : an analysis of the effects on caregivers and care receivers. *Health Canada: Ottawa*, 150pp.

Kiecolt-Glaser, Dura, J.R. Speicher, C.E., Trask, O., Glaser, R. (1991). Spousal caregivers of dementia victims: longitudinal changes in immunity and health. *Psychomatic Medicine, 53.*

Kramer, B.J. and Kipnis, S. (1995). Eldercareand work-role conflict: toward an understanding of gender differences in caregiver burden. *The Gerontologist,* 35(3), 340-48.

Miller B. and Caffasso, L. (1992). Gender differences in caregiving: factor artifact? *The Gerontologist,* 32, 498-507.

Neufeld, A. Harrison, M.J. (1995) Reciprocity and social support in caregivers' relationships: variations and consequences. *Qualitative Health Research, 5(3).*

Patterson, J.M., Leonard, B.J., Ttius, J.C. (1992). Home care for medically fragile children: impact on family health and well-being. *Development and Behaviorial Pediatrics,* 13(4).

Pavalko, E.K. and Artis, J.E. (1997). Women's caregiving and paid work: causal relationships in late midlife. *Journal of Gerontology: Social Sciences,* 52B (4), S170-79).

Payne, B.J., Grant, K.R., Gregory, D.M. (2001) *Women's caring work, in the context of Manitoba Health Reform.* National Network on Environments and Women's Health. Manitoba.

Phipps, S. & Lethbridge, L. (2002). Taking its toll: implications of paid and unpaid work responsibilities for women's well-being. *Health Balance Research Program.* Atlantic Centre of Excellence for Women's Health, Halifax, NS.

Romanow, R. (2002). Building on values:the future of health care in Canada. *Final Report, Ottawa.* 172.

Scharlach, A.E., Midanik, L.T., Runkle, M.C., Soghikian, K. (1997). Health practices of adults with elder care responsibilities. *Preventive Medicine, 26.*

Schultz, R. & Beach, S.R. (1999) Caregiving as a risk factor for mortality: the caregiver health effects study. *Journal of the American Medical Association, 282(23).*

Shultz, R. Visintainer, P., Williamson, G.M. (1990). Psychiatric and physical morbidity effects of caregiving *Journal of Gerontology: Psychological Sciences, 45(5)*

Snow-Spracklin, E.G. (1998). *Caregivers' perception of health burden, social support, and care receiver problems.* Masters Thesis. School of Nursing, Memorial University of NF.

Statistics Canada, 2001 Census, "Number of persons aged 15 and over, by unpaid hours spent providing care or assistance to seniors, Canada, 1996 and 2001," *The Changing Profile of Canada's Labour Force,* catalogue no. 96F0030-XIE-2001009, released 11 February, 2003, available at: http://www12.statcan.ca/english/census01/products/analytic/companion/paid/canada.cfm.

Stone, R.I. and Short, P.F. (1990). The competing demands of employment and informal caregiving to disabled elders. *Medical Care,* 28(6), 513-26.

Stone, R. Dr. PH, Cafferata, G.L., Sangl, J. (1987). Caregivers of the frail elderly: A national profile. *The Gerontologist,* 27 (5), 616-24.

Uchino, B.N., Cacioppo, Kiecolt-Glaser, J.K. (1996). The relationship between social support and physiological processes: a review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin,* 119(3).

Wilcox, S. & King, A.C. (1999). Sleep complaints in older women who are family caregivers. *Journal of Gerontology,* 54B(3).

Wilkins, R. (1992). Health of rural populations: selected indicators. In R.D. Bollman (Ed.) *Rural and Small Town Canada.* Toronto: Thompson Educational Publishing.

Appendix I – Statistics Canada Census 2001 Table

Table 3. Number of persons aged 15 and over, by unpaid hours spent providing care or assistance to seniors, Canada, 1996 and 2001

	1996		2001	
	Number of persons	%	Number of persons	%
Both sexes	**22,628,920**	**100.0**	**23,901,360**	**100.0**
No hours	18,905,475	83.5	19,555,605	81.8
Less than 5 hours	2,443,210	10.8	2,768,390	11.6
5 to 9 hours	735,680	3.3	925,900	3.9
10 or more hours	544,555	2.4	651,470	2.7
10 to 19 hours	..	..	327,100	1.4
20 or more hours	..	..	324,375	1.4
Women	**11,606,470**	**100.0**	**12,274,570**	**100.0**
No hours	9,382,045	80.8	9,703,440	79.1
Less than 5 hours	1,388,900	12.0	1,554,940	12.7
5 to 9 hours	473,650	4.1	584,470	4.8
10 or more hours	361,885	3.1	431,725	3.5
10 to 19 hours	..	..	216,690	1.8
20 or more hours	..	..	215,035	1.8
Men	**11,022,455**	**100.0**	**11,626,790**	**100.0**
No hours	9,523,430	86.4	9,852,165	84.7
Less than 5 hours	1,054,315	9.6	1,213,450	10.4
5 to 9 hours	262,035	2.4	341,425	2.9
10 or more hours	182,675	1.7	219,750	1.9
10 to 19 hours	..	..	110,410	0.9
20 or more hours	..	..	109,340	0.9
(1) Refers to the week preceding Census Day.				
.. not available for a specific reference period.				

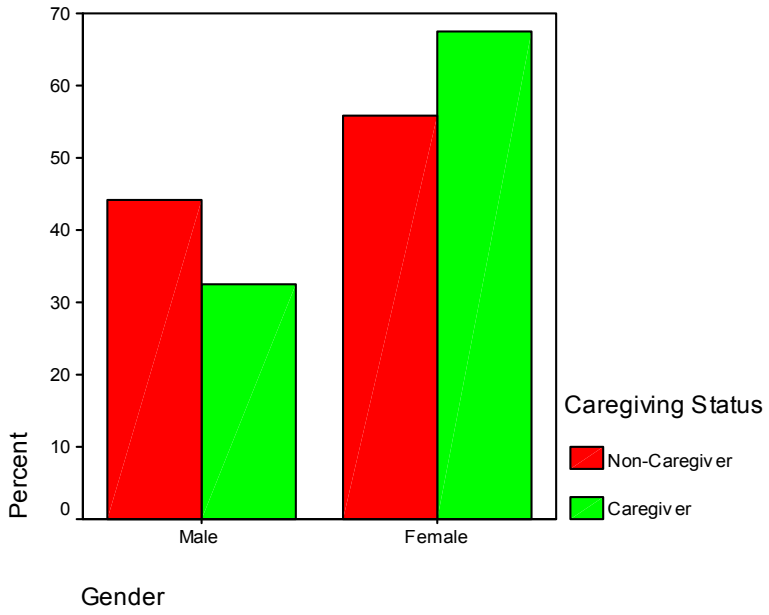
Appendix II – Occupation Types

Table 4. Occupation Types

Occupation Type	Frequency	Percent
Management	100	6.2%
Business, Finance & Administration	176	10.9%
Natural & Applied Sciences	34	2.1%
Health	185	11.4%
Social Science, Education, Government & Religion	207	12.8%
Art, Culture, Recreation & Sports	20	1.2%
Sales & Service	357	22.0%
Trades, Transport & Equipment Operators	148	9.1%
Primary Industries	64	4.0%
Processing, Manufacturing & Utilities	97	6.0%
Other	232	14.3%
Total	1620	100%

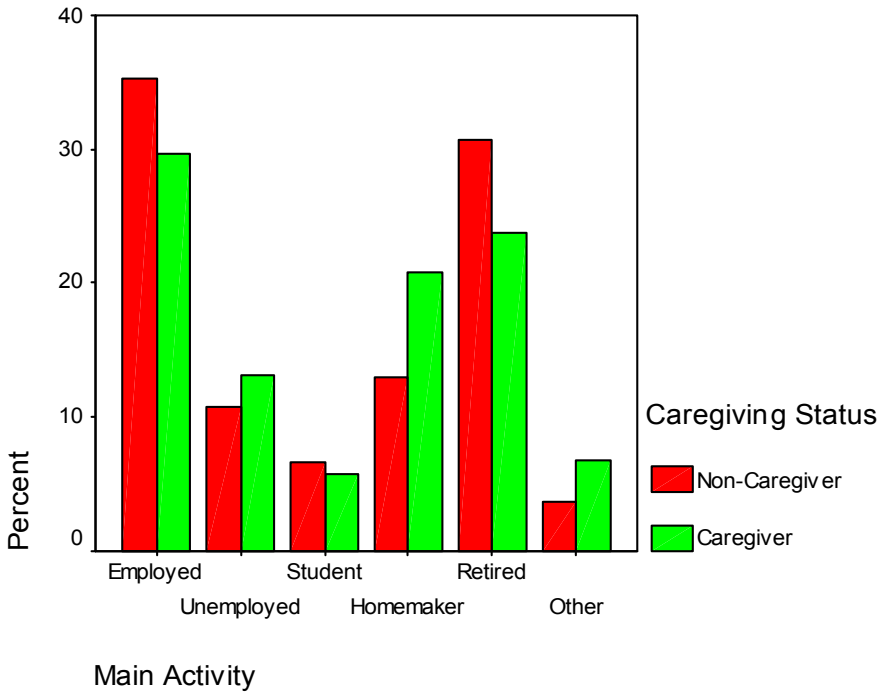
Appendix III – Glace Bay Graphs

Figure 1. Gender



p=0.002

Figure 2. Main Activity



p=0.003

Figure 3. Education Level

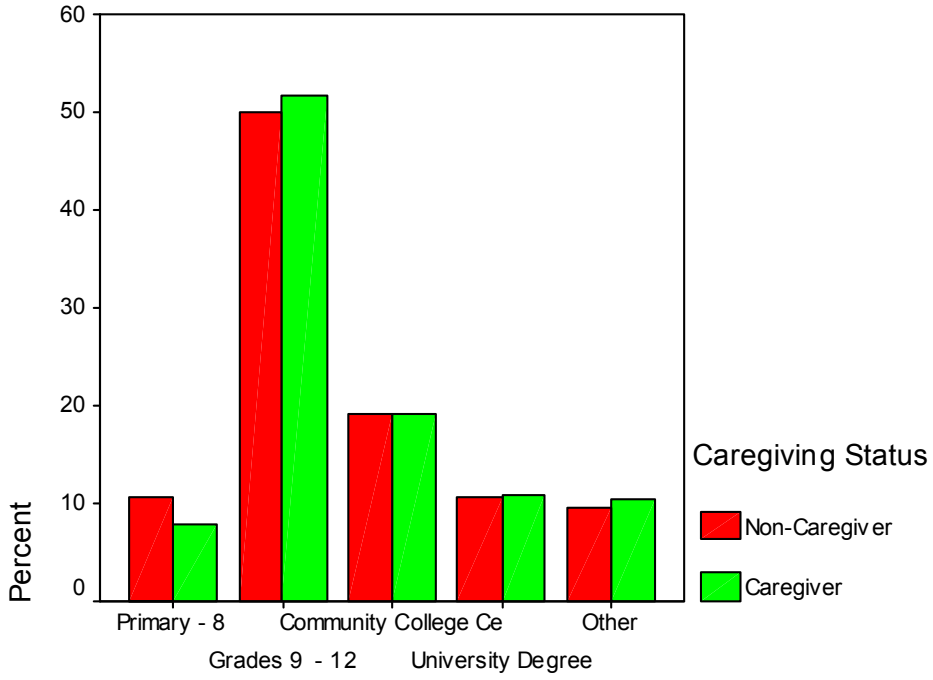


Figure 4. Income

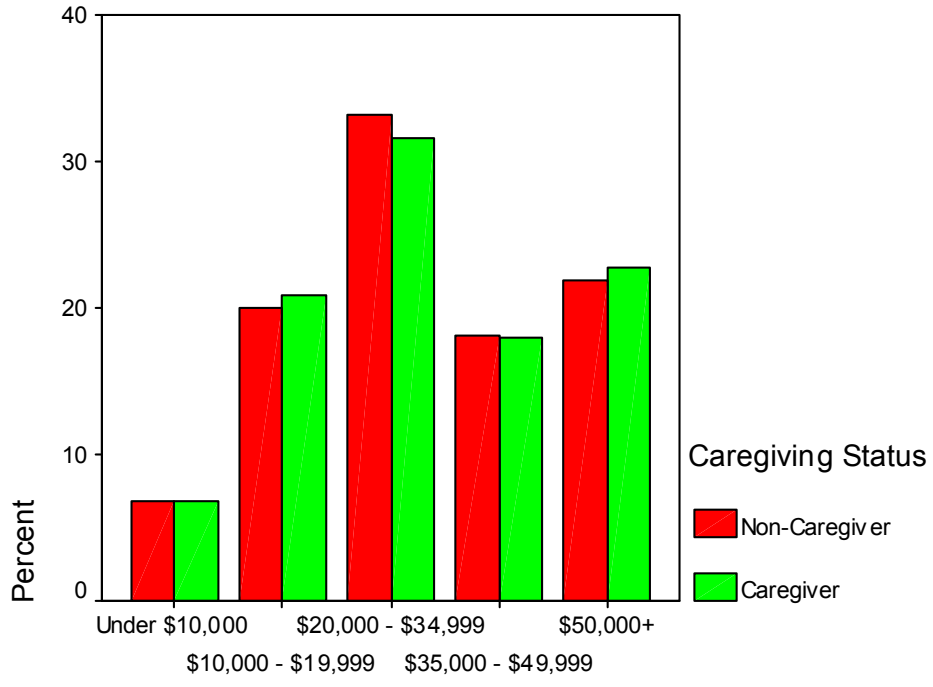
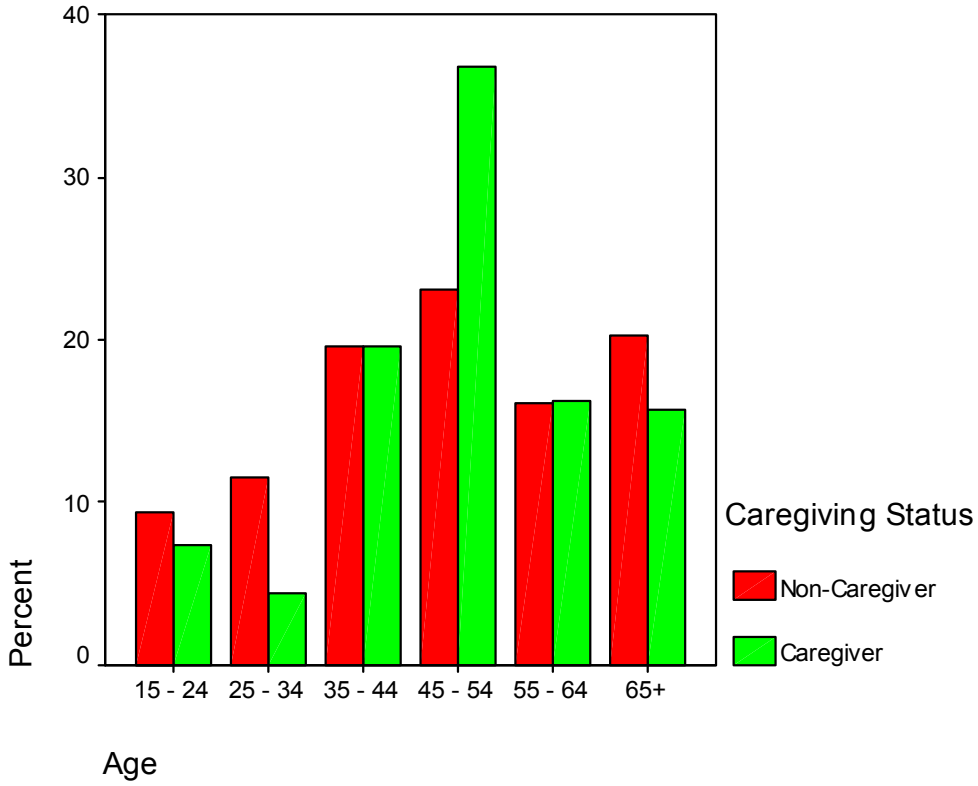
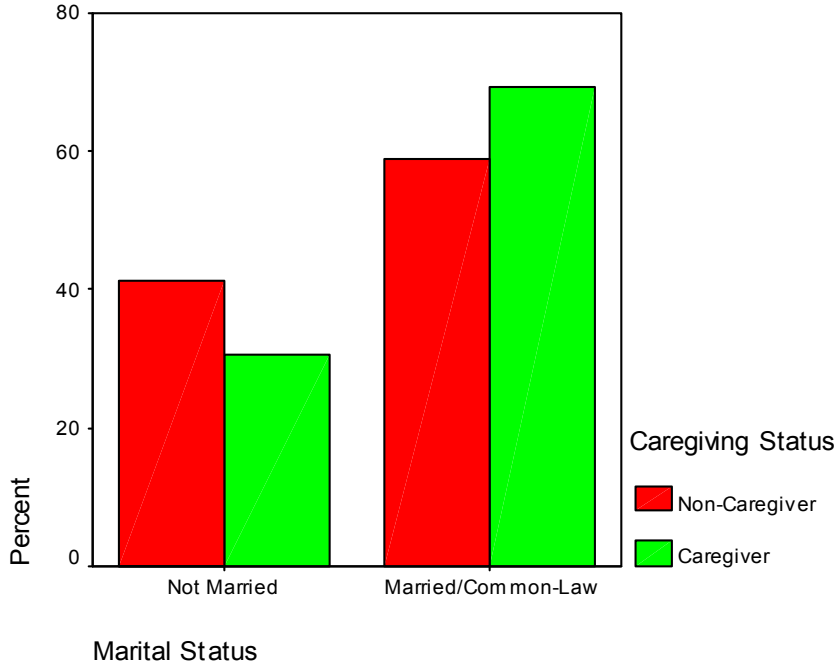


Figure 5. Age



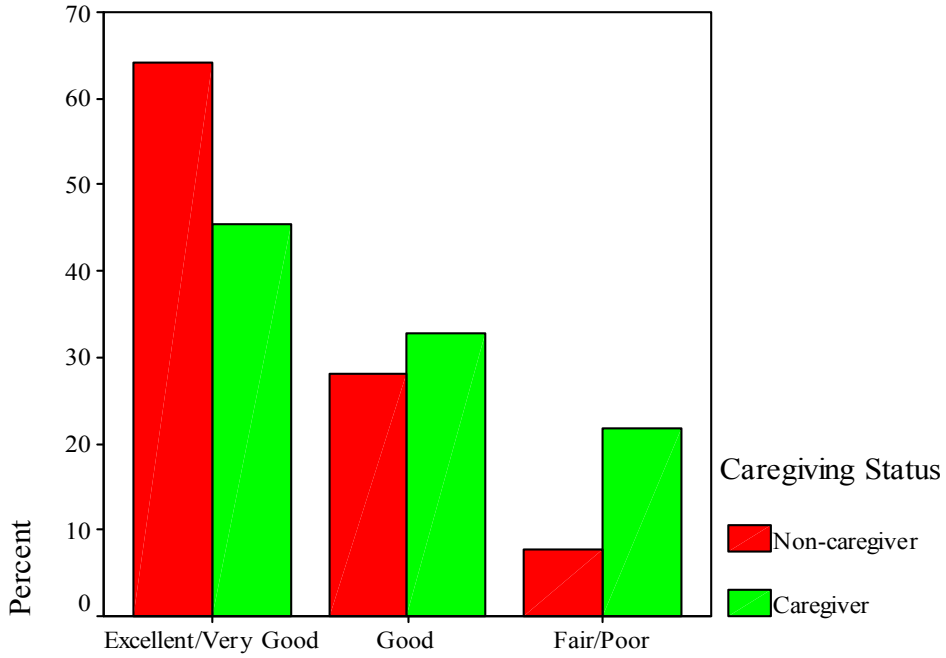
p=0.000

Figure 6. Marital Status



p=0.003

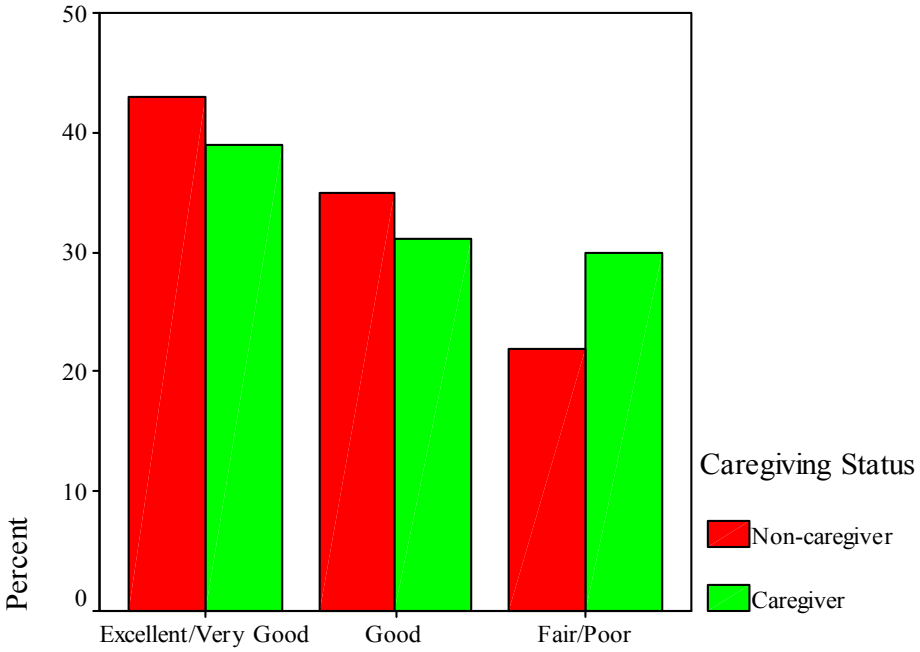
Figure 7. Perceived Health Status - Ages 15-44



Would you say your health is...

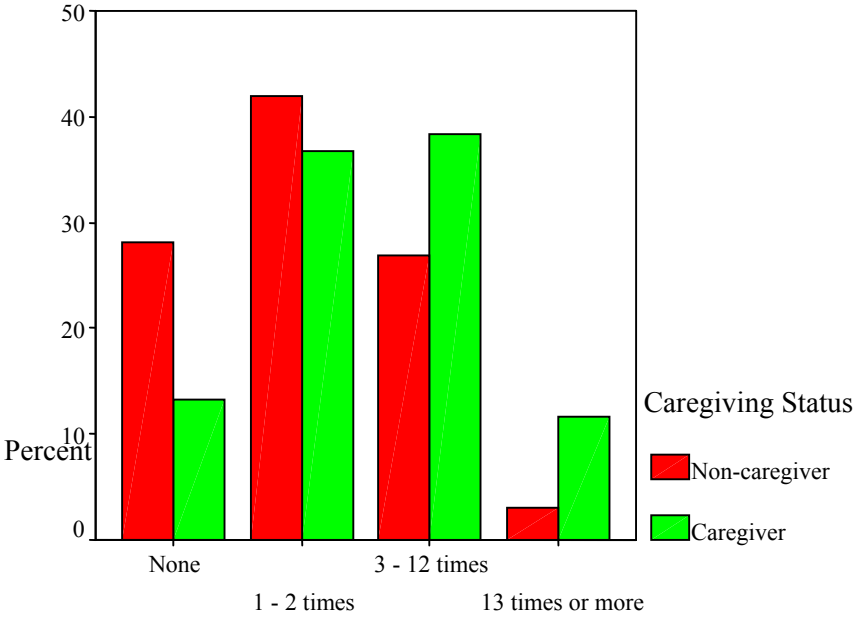
p=0.000

Figure 8. Perceived Health Status - Ages 45+



Would you say your health is...

Figure 9. Physician Contact (Past Year) - Ages 15-44



p=0.012

Figure 10. Physician Contact (Past Year) - Ages 45+

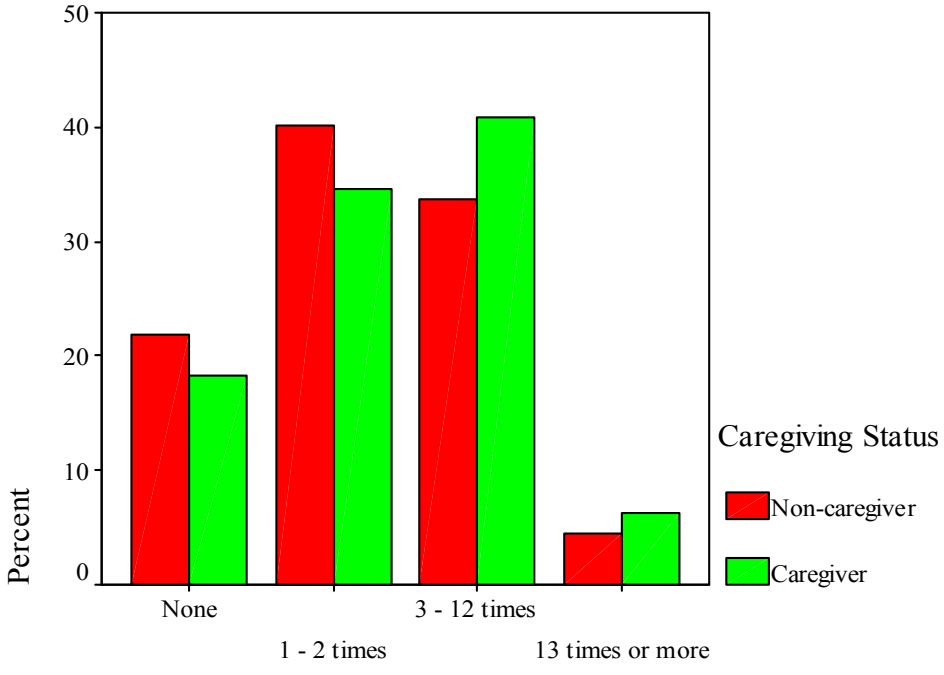


Figure 11. Visits to Outpatients/Emergency Room (Past Year) - Ages 15-44

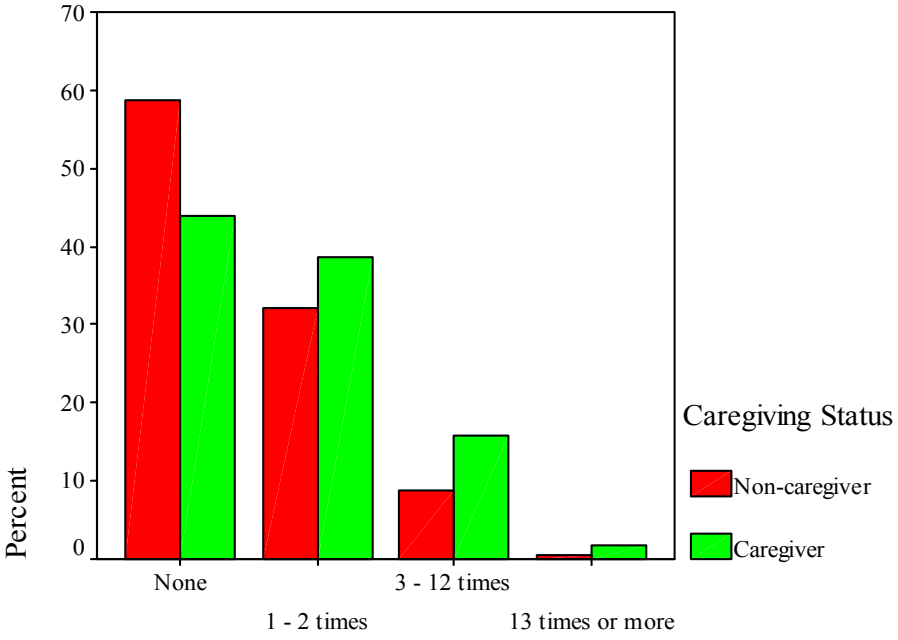


Figure 12. Visits to Outpatients/Emergency Room (Past Year) - Ages 45+

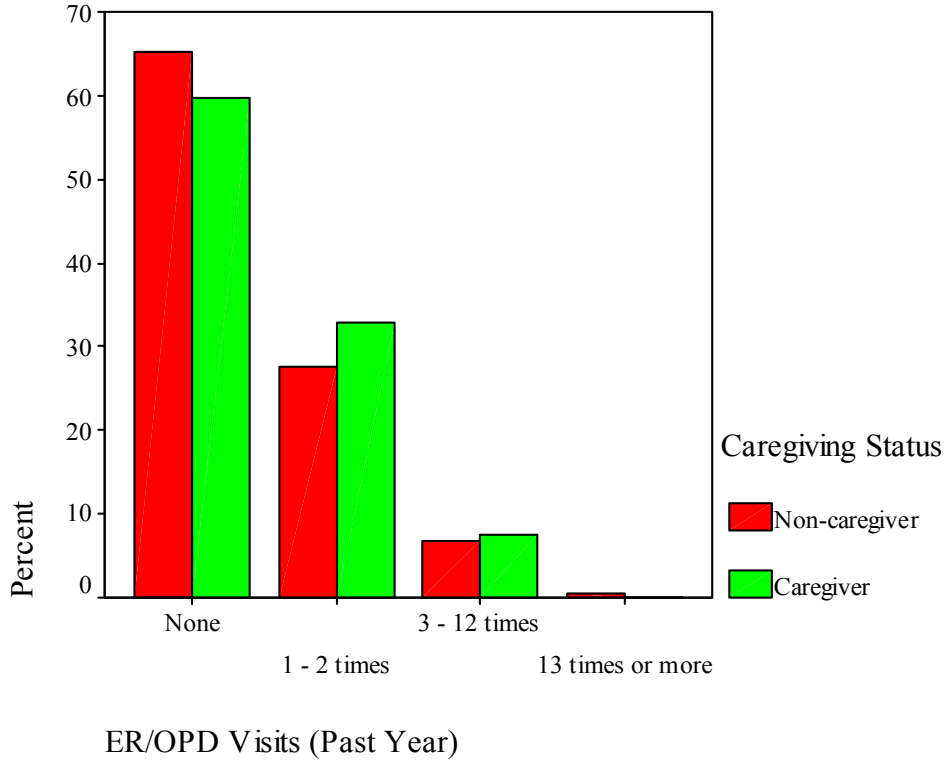
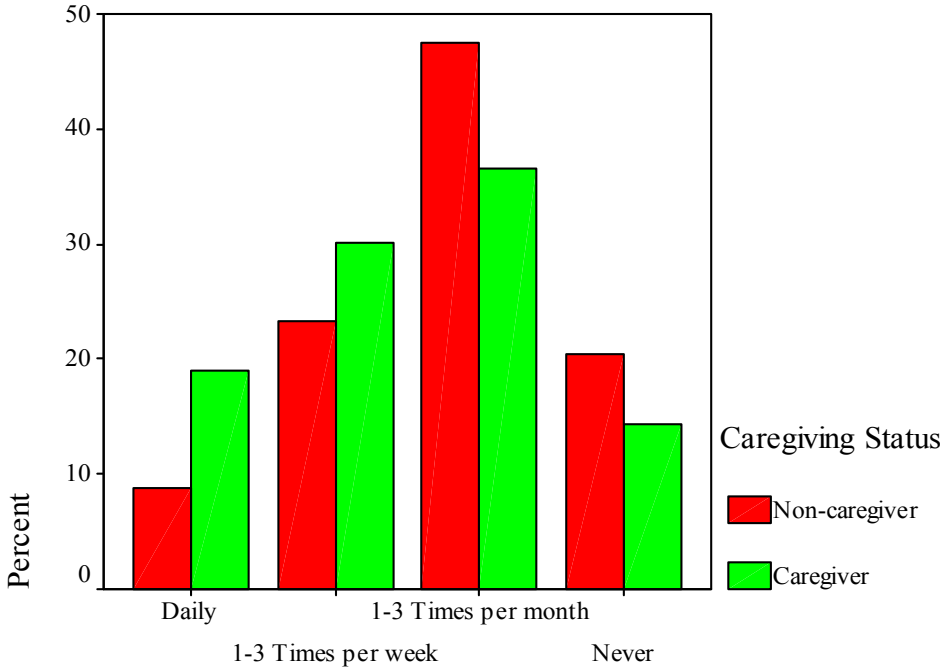


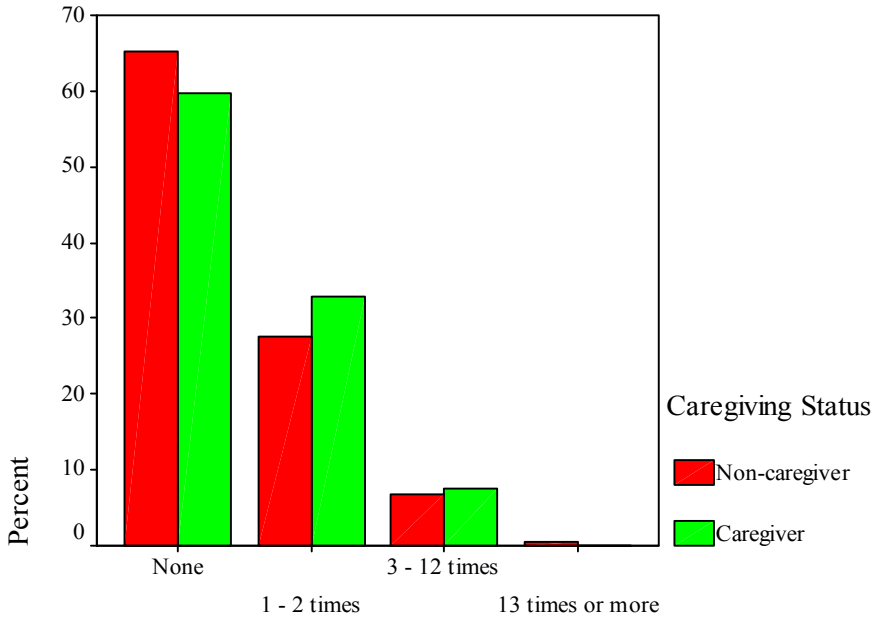
Figure 13. Pain Reliever/Anti-Inflammatory Use - Ages 15-44



Pain relievers like aspirin, Tylenol, arthritis medicine, anti-inflammat

p=0.023

Figure 14. Pain Reliever/Anti-Inflammatory Use - Ages 45+



ER/OPD Visits (Past Year)

Figure 15. Anti-Depressant Use

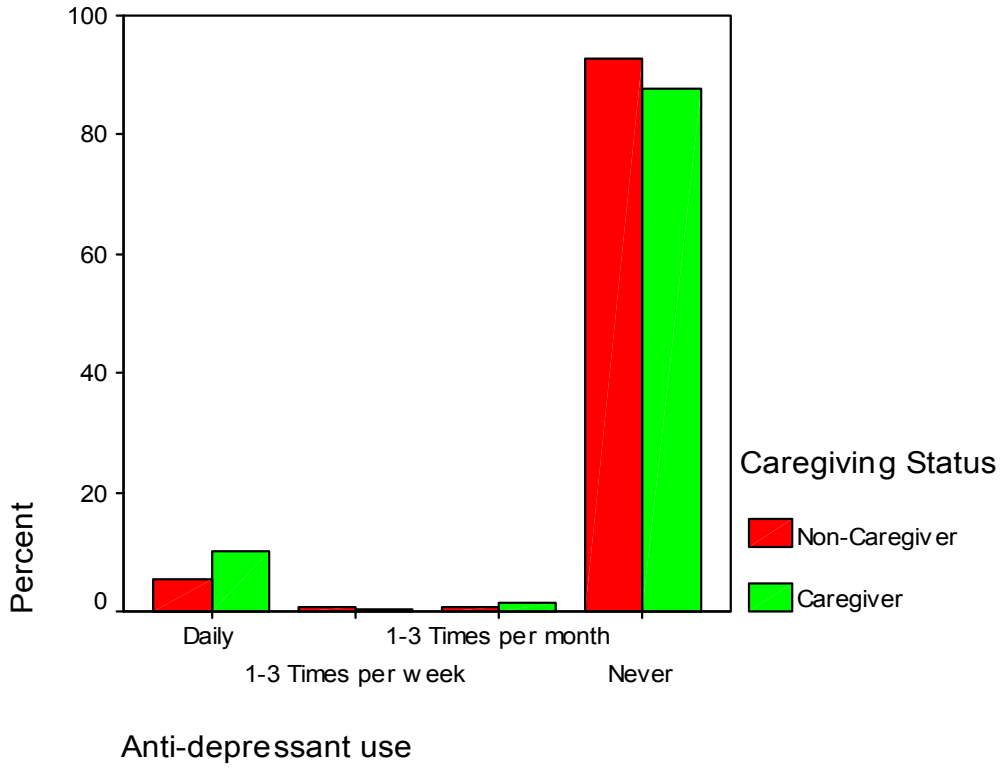
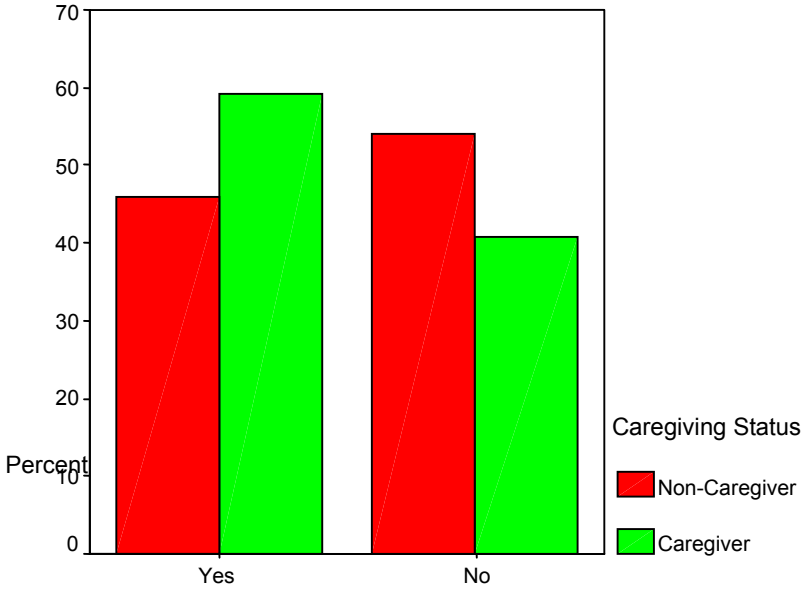
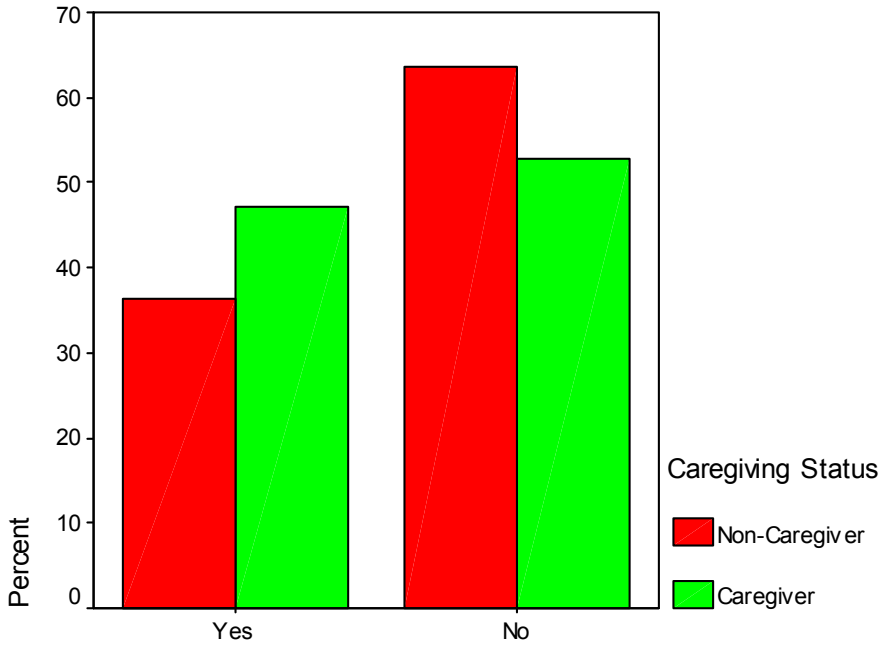


Figure 16. "At the end of the day, do you often feel that you have not accomplished what you set out to do?"



p=0.000

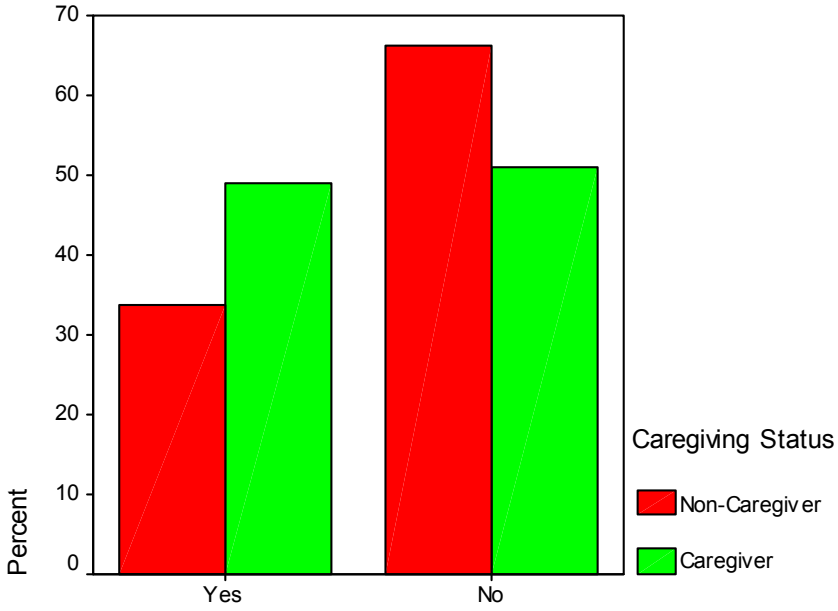
Figure 17. "Do you worry that you don't spend enough time with your family or friends?"



...worry that you don't spend enough time with your family or friends

p=0.003

Figure 18. "Do you feel that you're constantly under stress trying to accomplish more than you can handle?"



Feel that you're constantly under stress trying to accomplish more

p=0.000

Figure 19. Exercise Levels - Ages 15-44

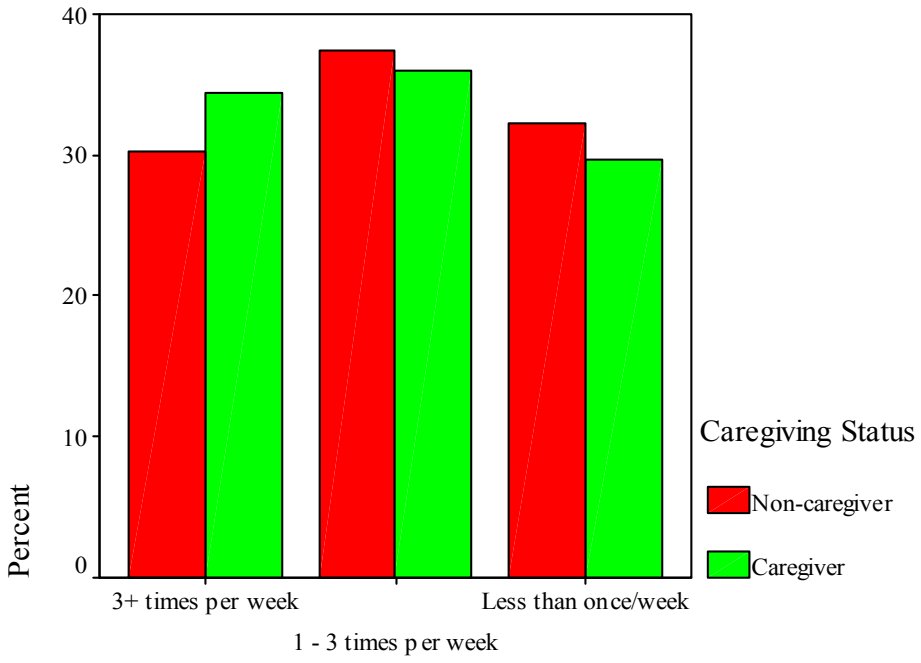
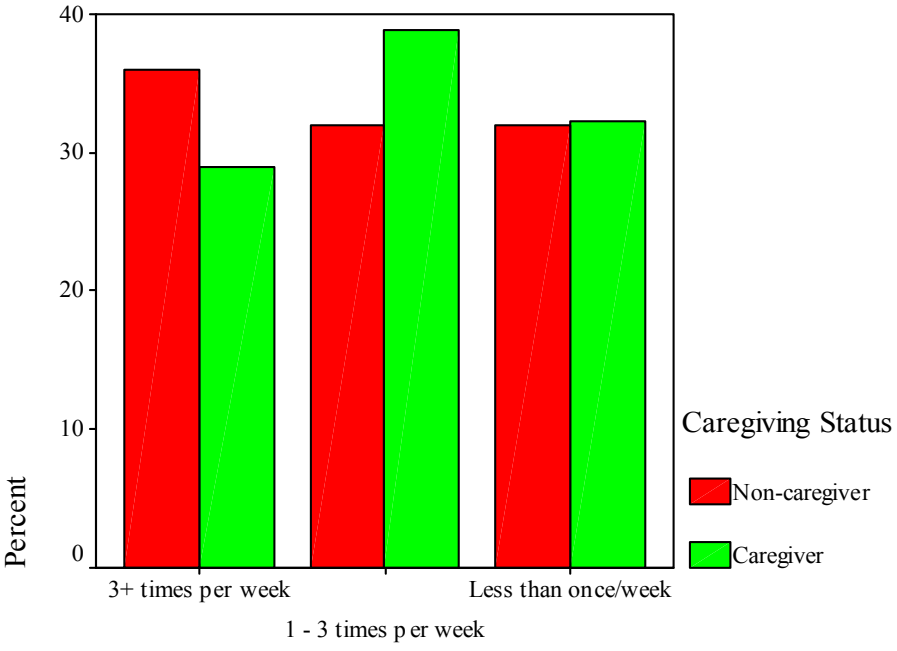


Figure 20. Exercise Levels - Ages 45+



p=0.021

Appendix IV – Kings County Graphs

Figure 21. Gender

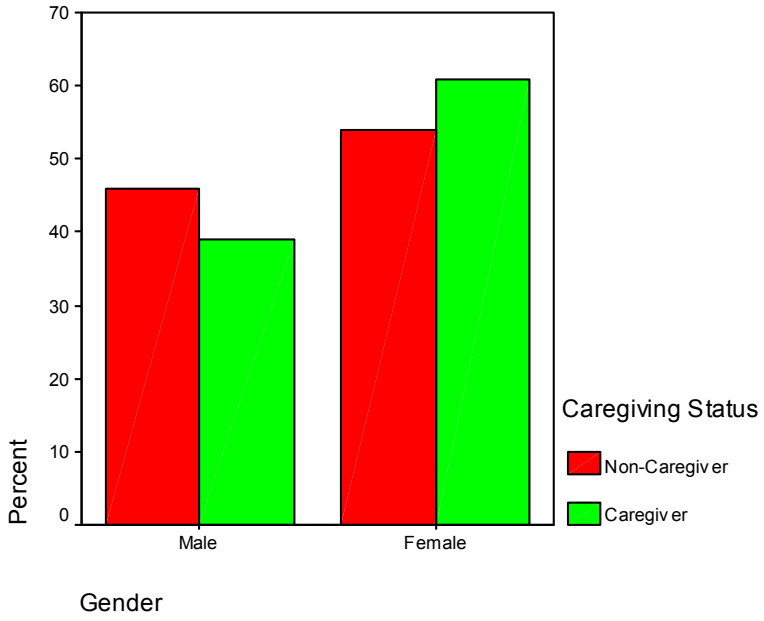


Figure 22. Main Activity

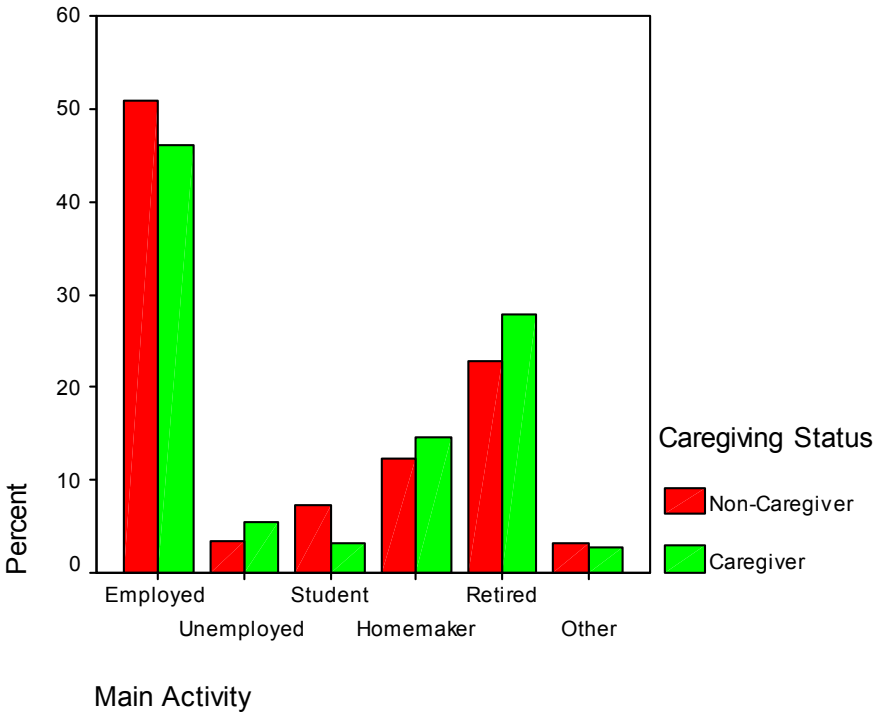


Figure 23. Education Level

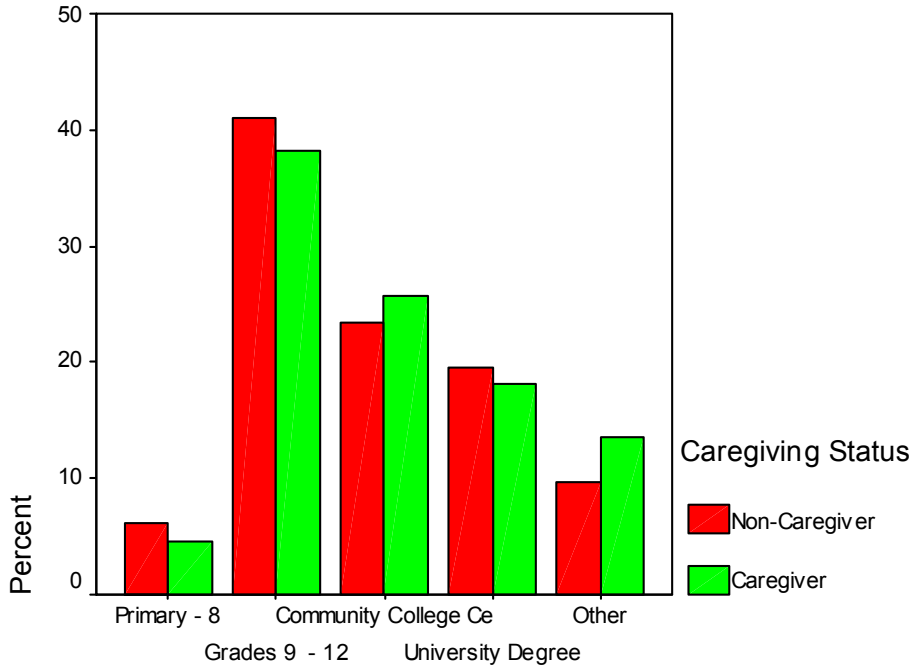
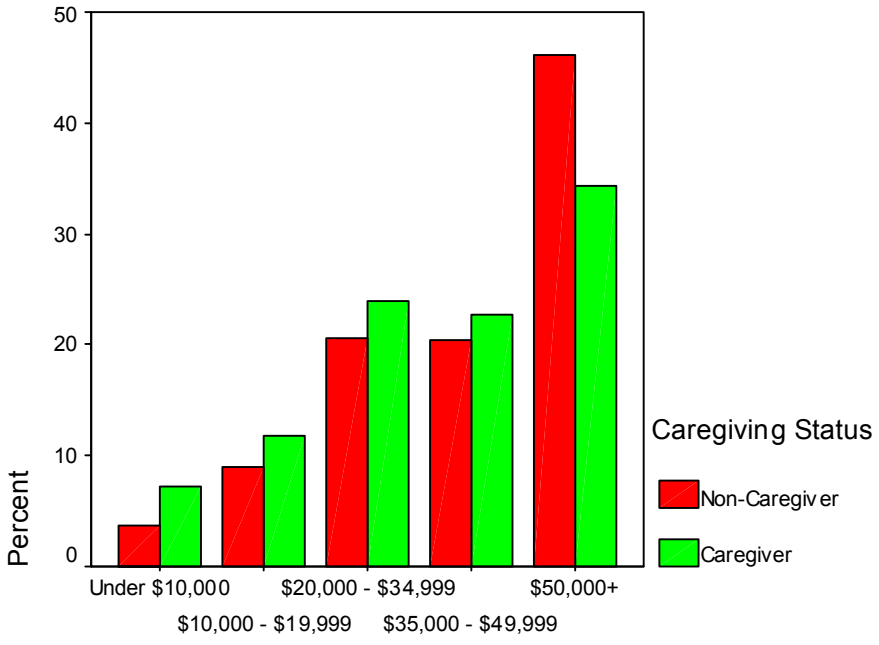
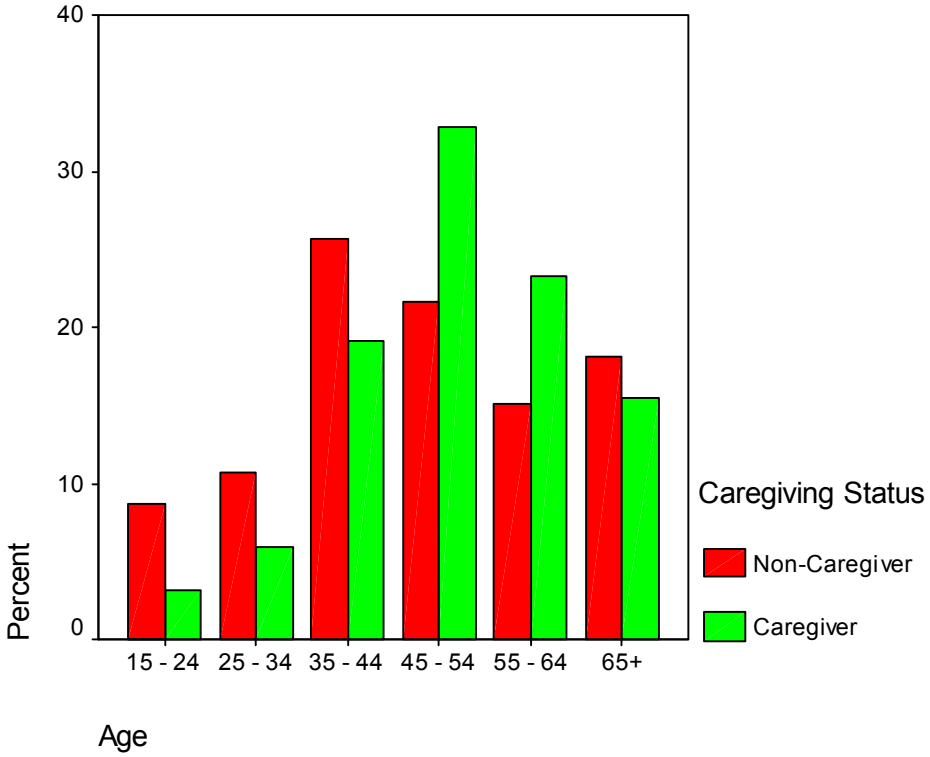


Figure 24. Income



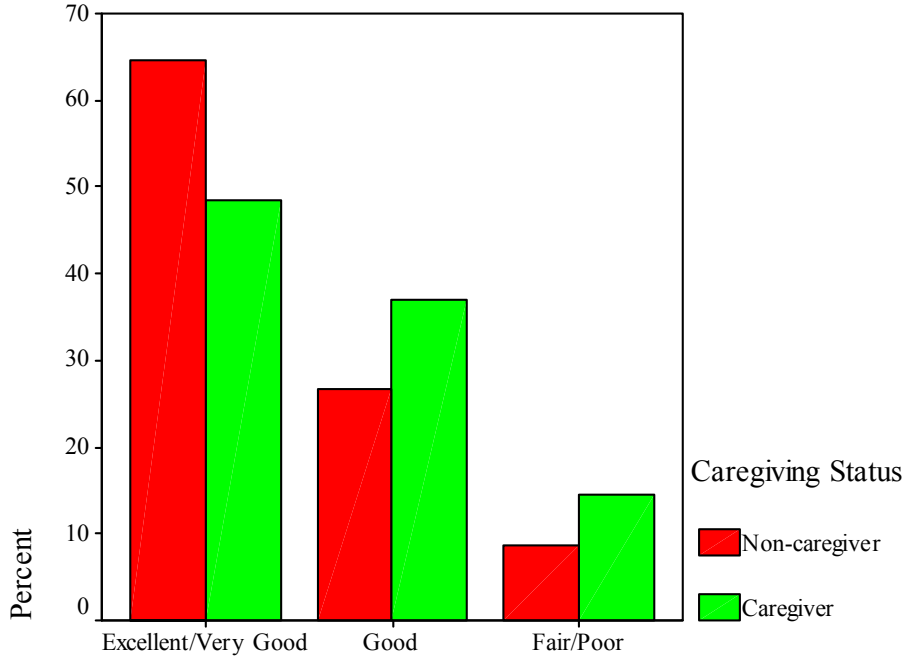
p=0.005

Figure 25. Age



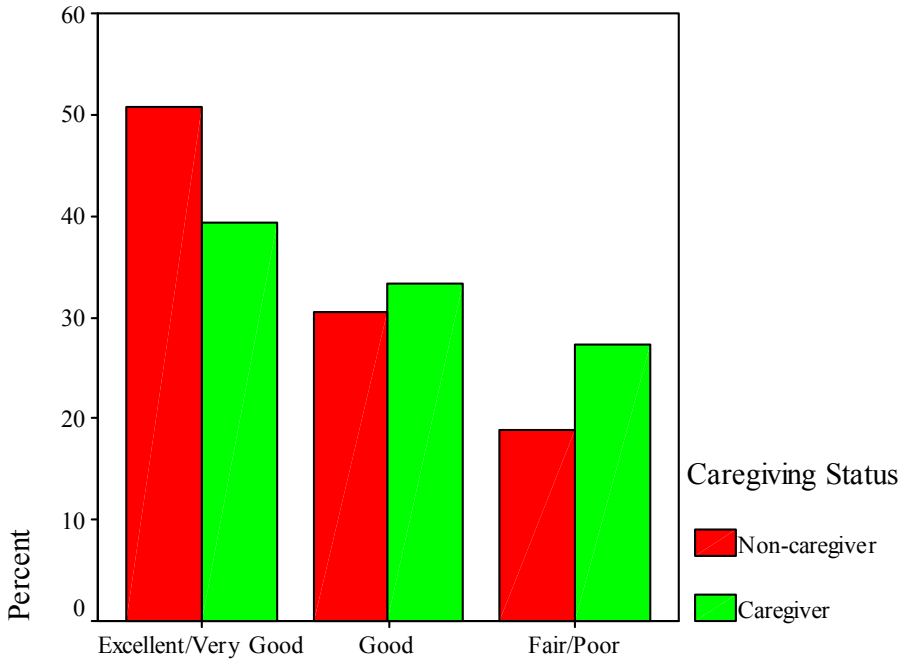
p=0.000

Figure 26. Perceived Health Status - Ages 15-44



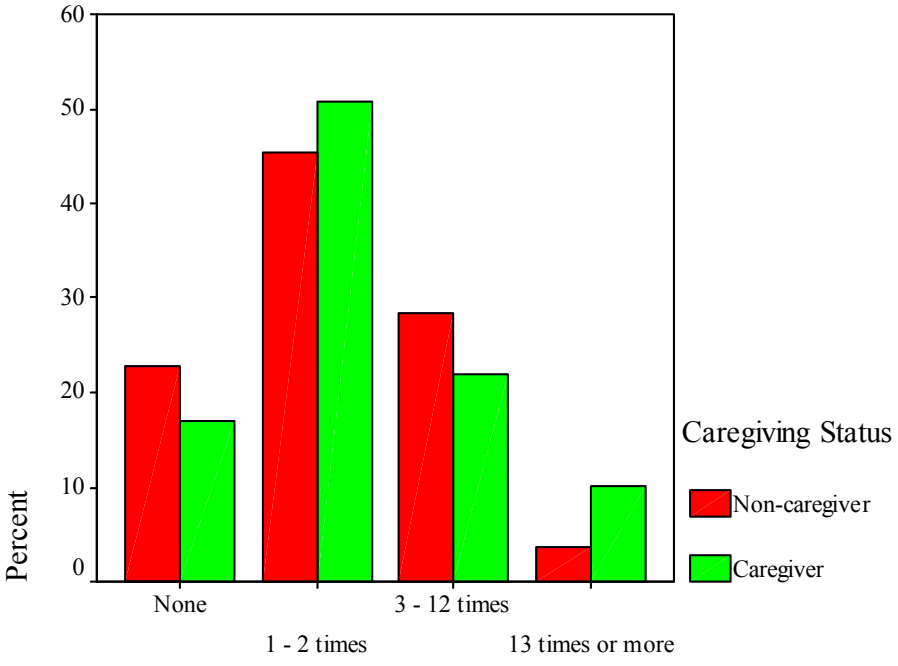
p=0.034

Figure 27. Perceived Health Status - Ages 45+



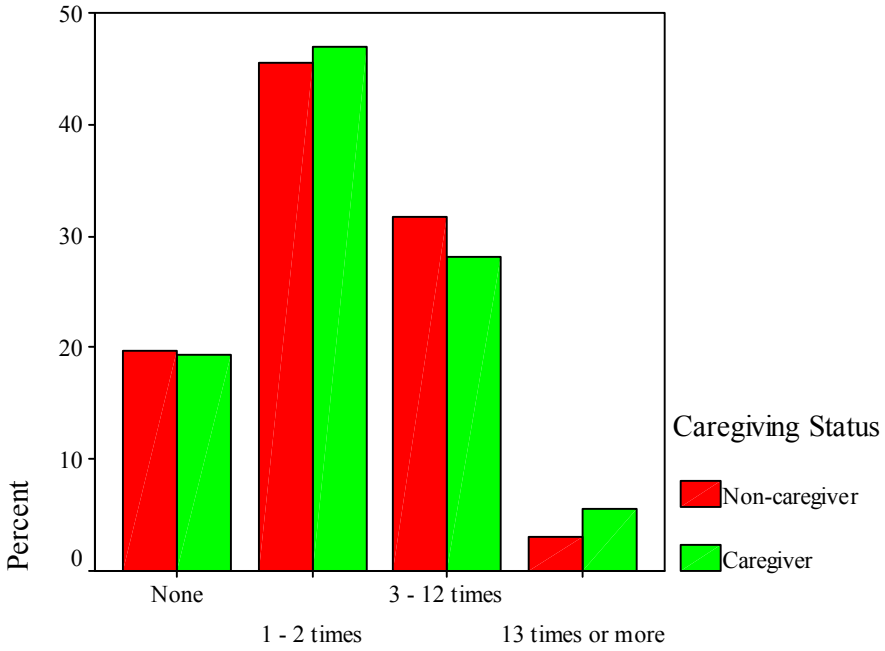
Would you say your health is...

Figure 28. Contact with Physicians (Past Year) - Ages 15-44



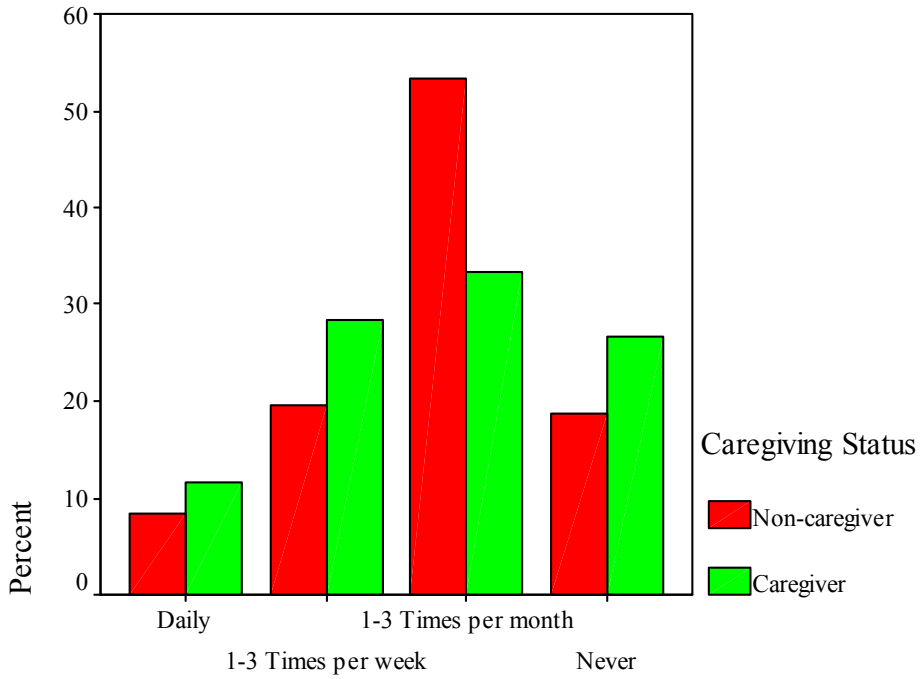
Physician Contact (Past Year)

Figure 29. Contact with Physicians (Past Year) - Ages 45+



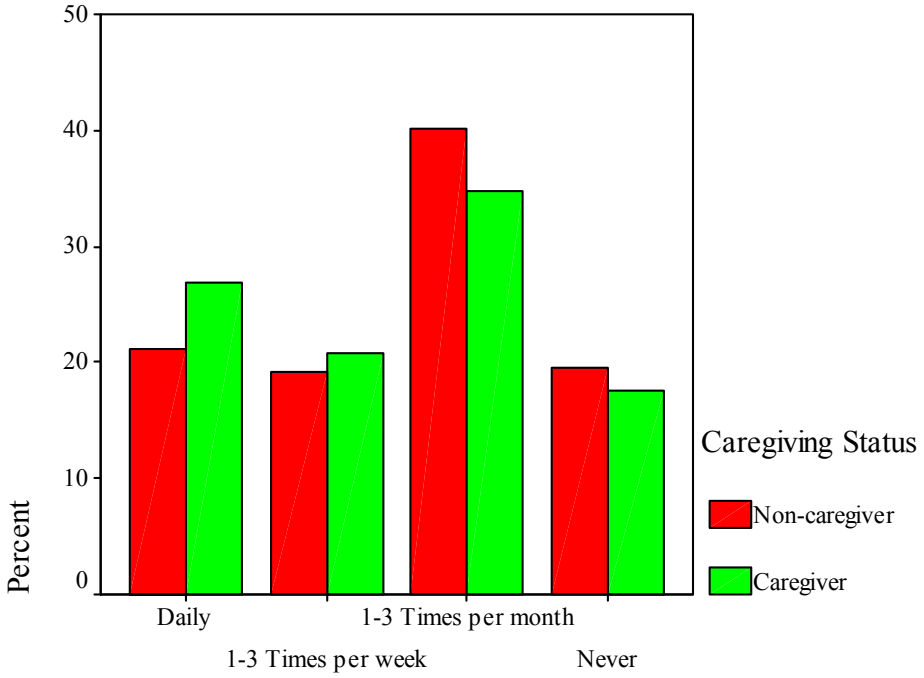
Physician Contact (Past Year)

Figure 30. Pain Reliever/Anti-Inflammatory Use (Past Year) - Ages 15-44



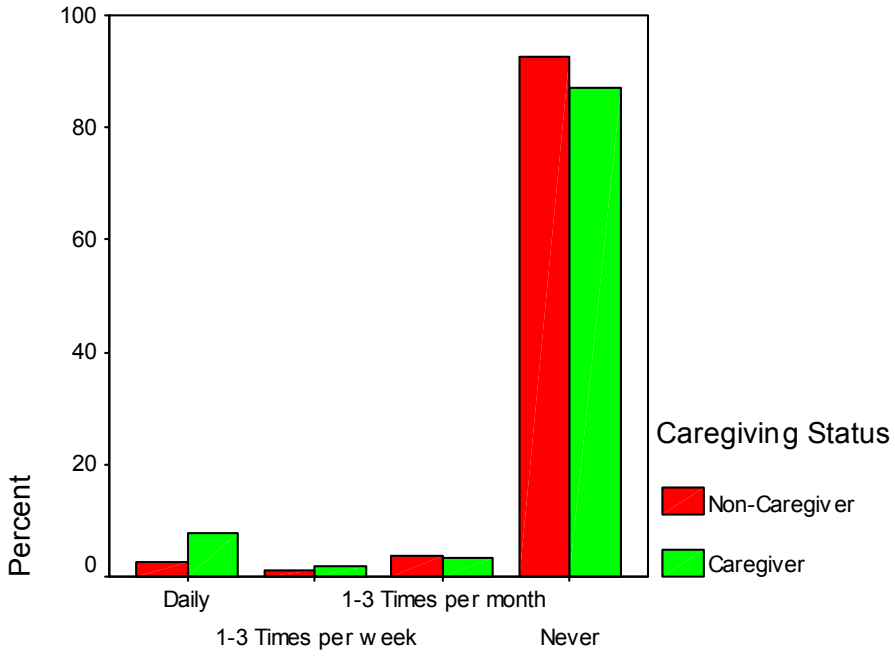
Pain relievers like aspirin, Tylenol, arthritis medicine, anti-inflammat

Figure 31. Pain Reliever/Anti-Inflammatory Use (Past Year) - Ages 45+



Pain relievers like aspirin, Tylenol, arthritis medicine, anti-inflammat

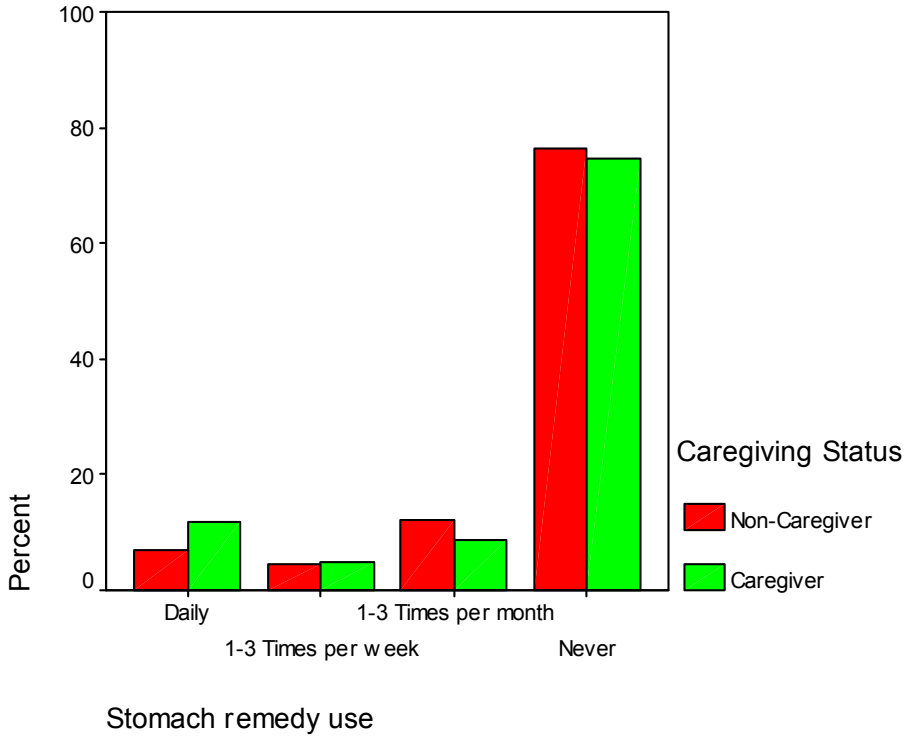
Figure 32. Sleeping Pill Use (Past Year)



Sleeping pill use

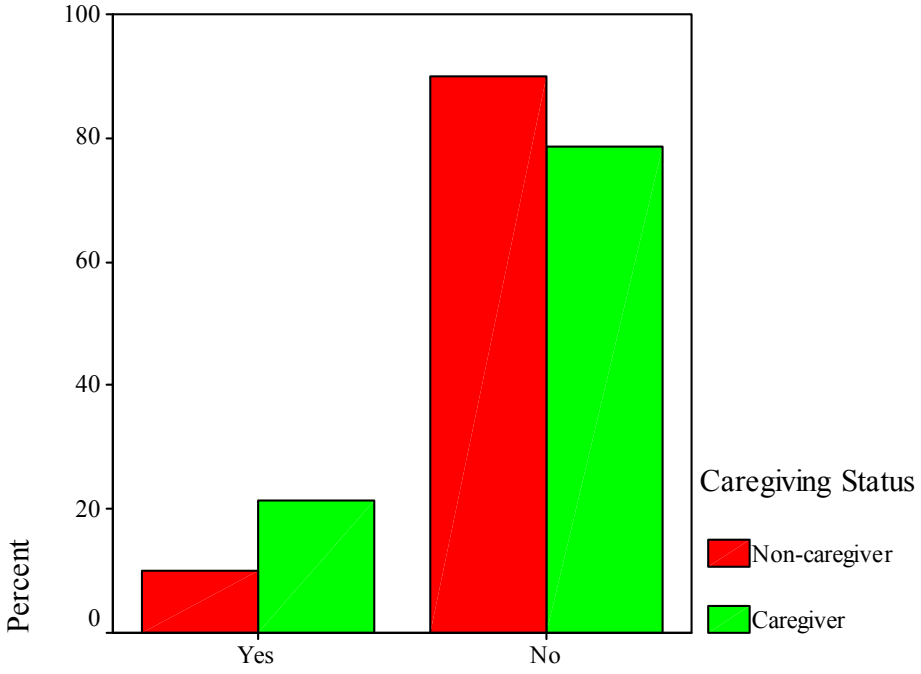
p=0.001

Figure 33. Stomach Remedy Use (Past Year)



p=0.050

Figure 34. Activity Limitation - Ages 15-44



p=0.007

Figure 35. Activity Limitation - Ages 45+

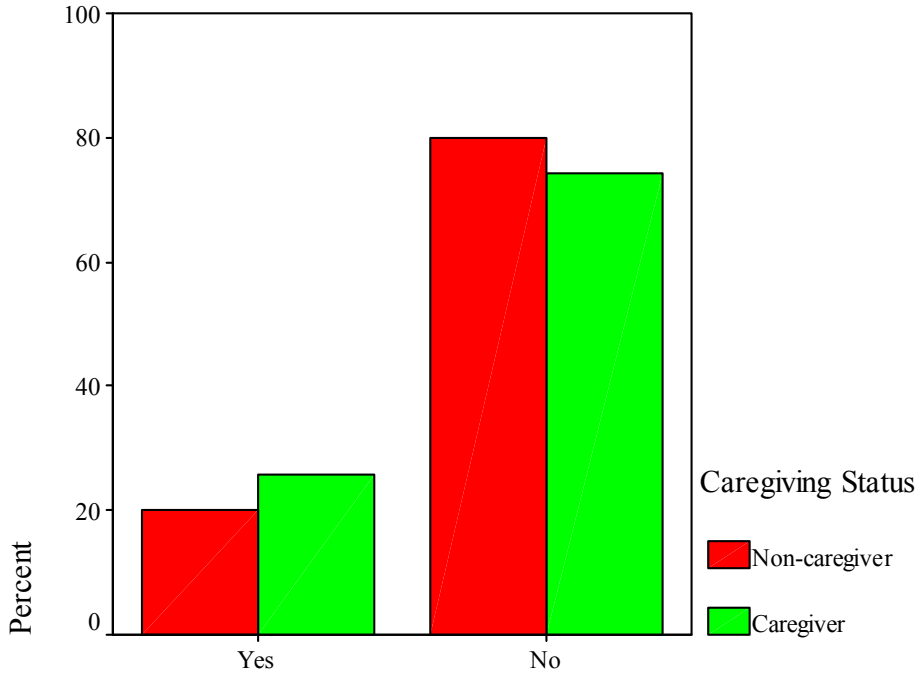


Figure 36. "At the end of the day, do you often feel that you have not accomplished what you set out to do?"

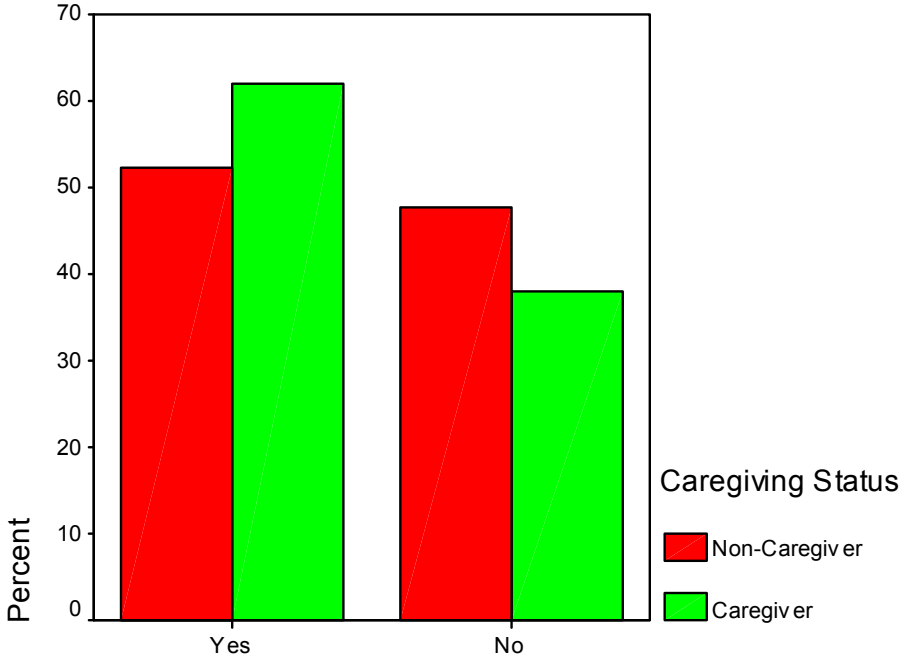
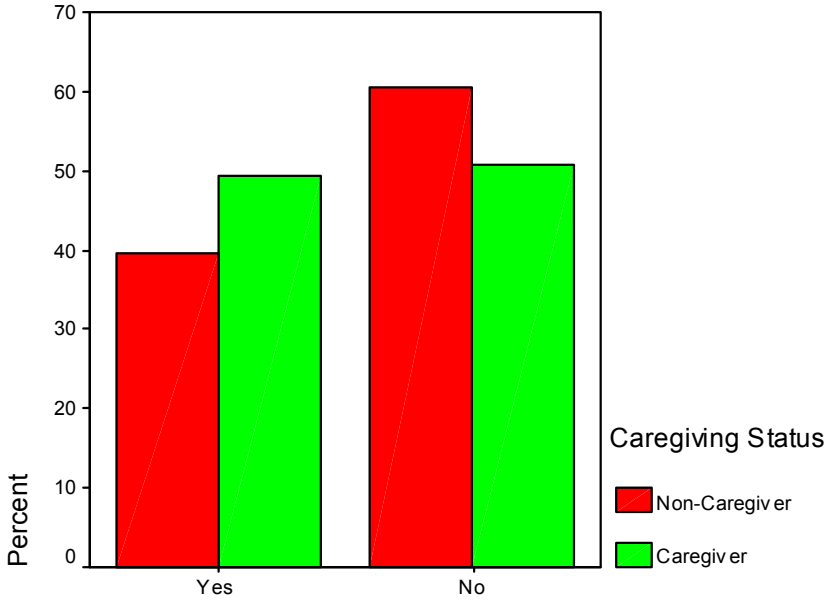


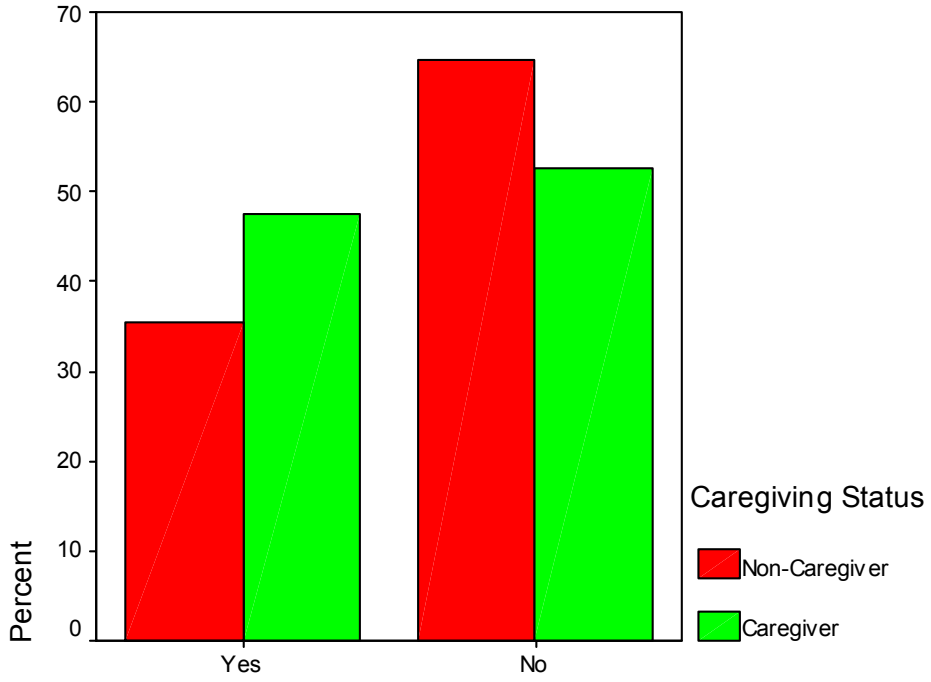
Figure 37. "Do you worry that you don't spend enough time with your family or friends?"



...worry that you don't spend enough time with your family or frie

p=0.006

Figure 38. "Do you feel that you're constantly under Stress trying to accomplish more than you can handle?"



Feel that you're constantly under stress trying to accomplish mor

p=0.001

Appendix V – Caregiver Graphs

Figure 39. Gender

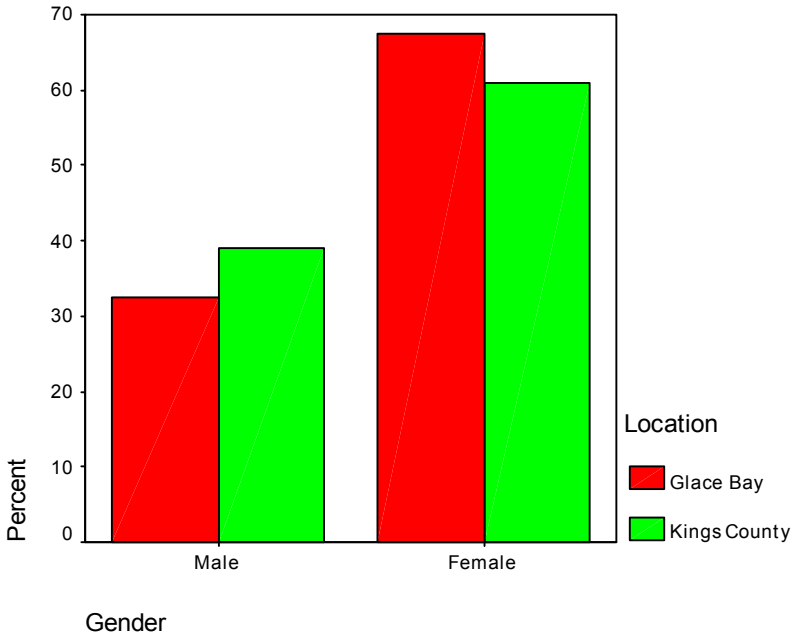
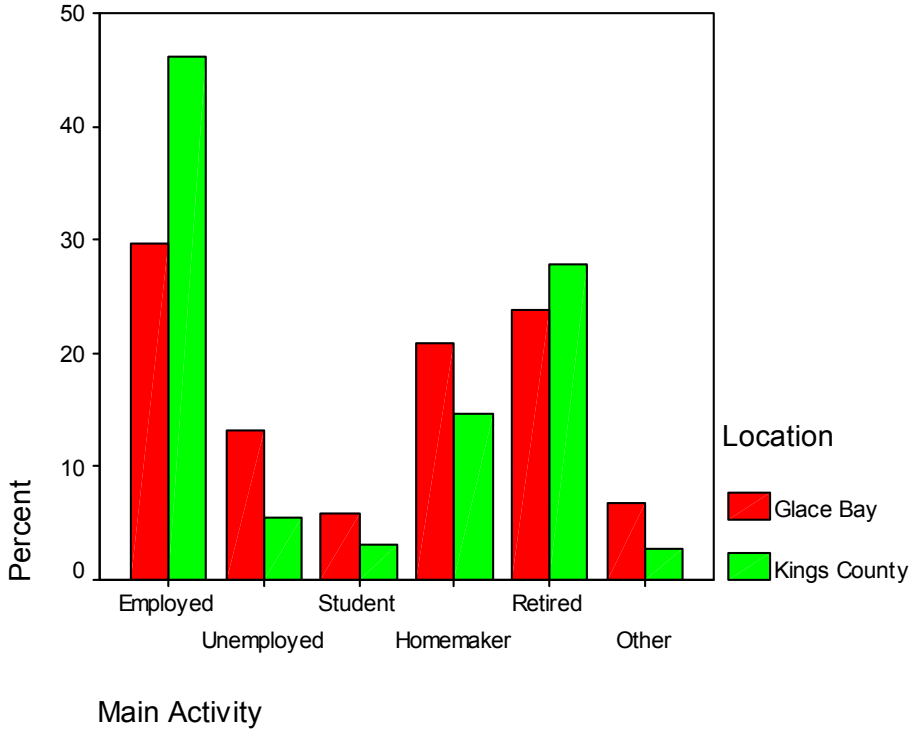


Figure 40. Main Activity



p=0.000

Figure 41. Education Level

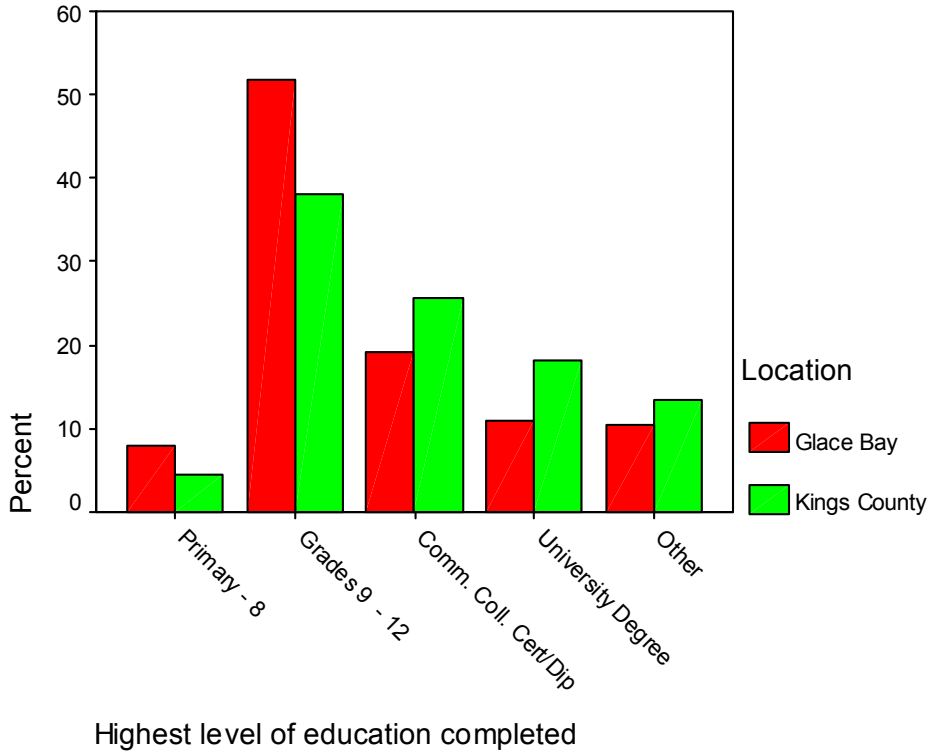
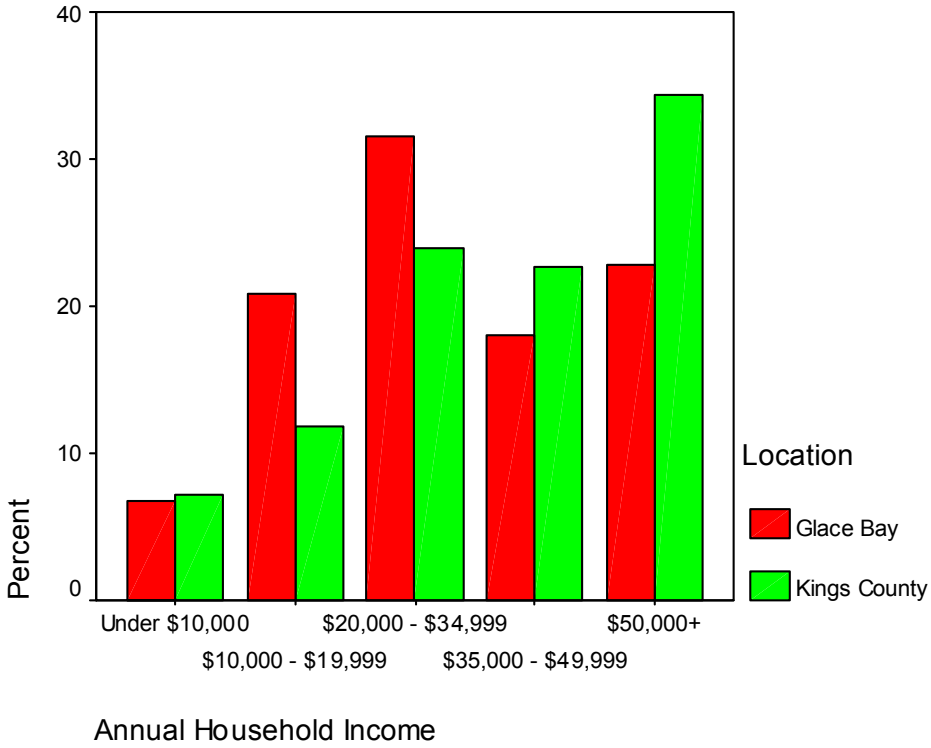


Figure 42. Income



p=0.018

Figure 43. Age

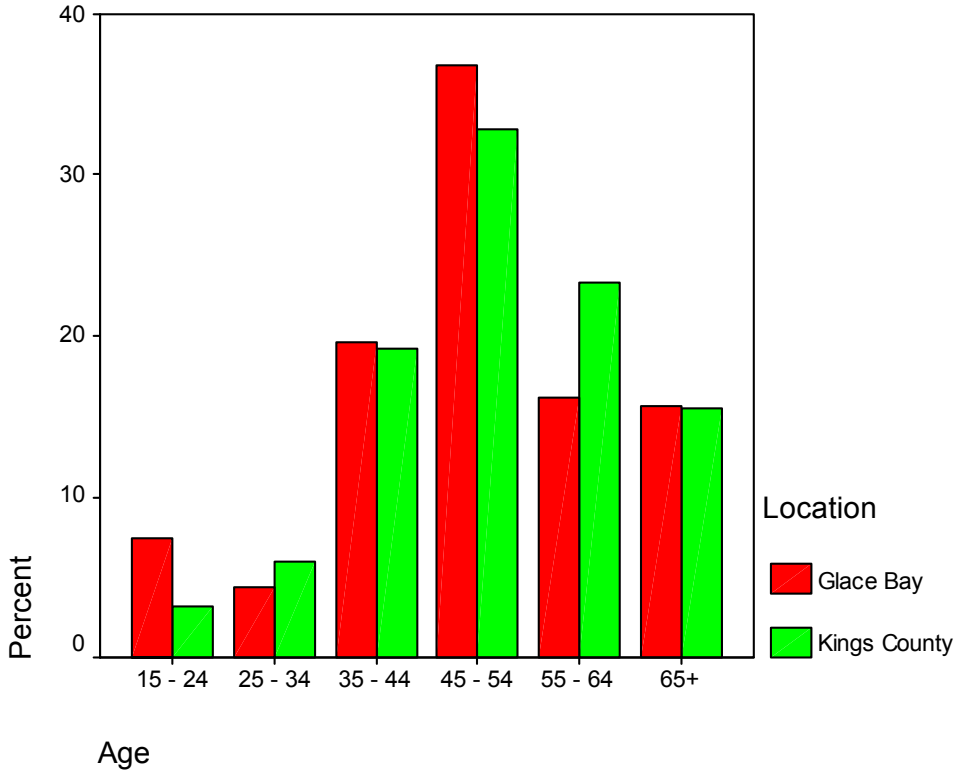
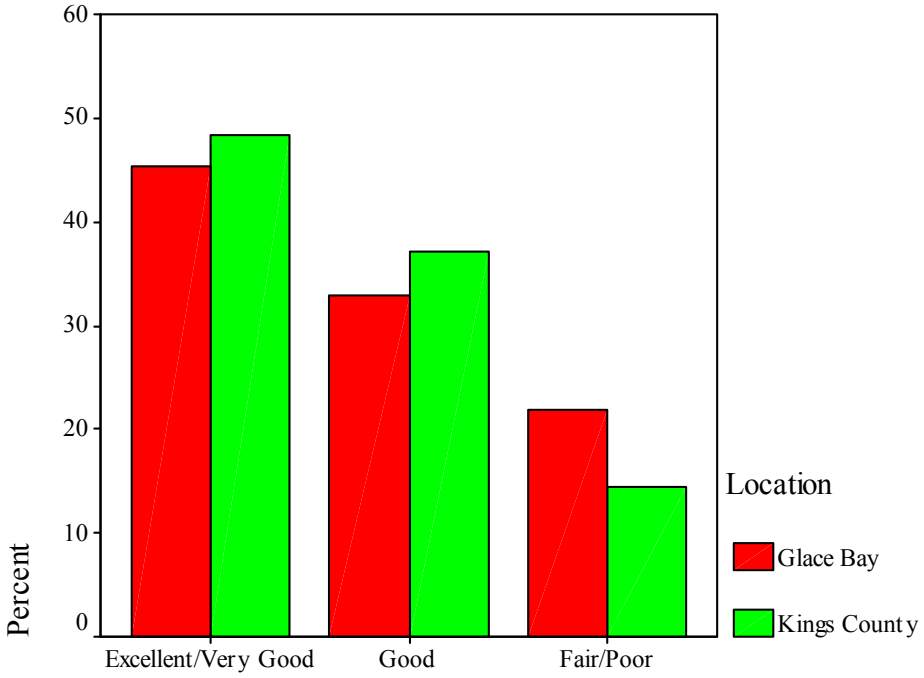


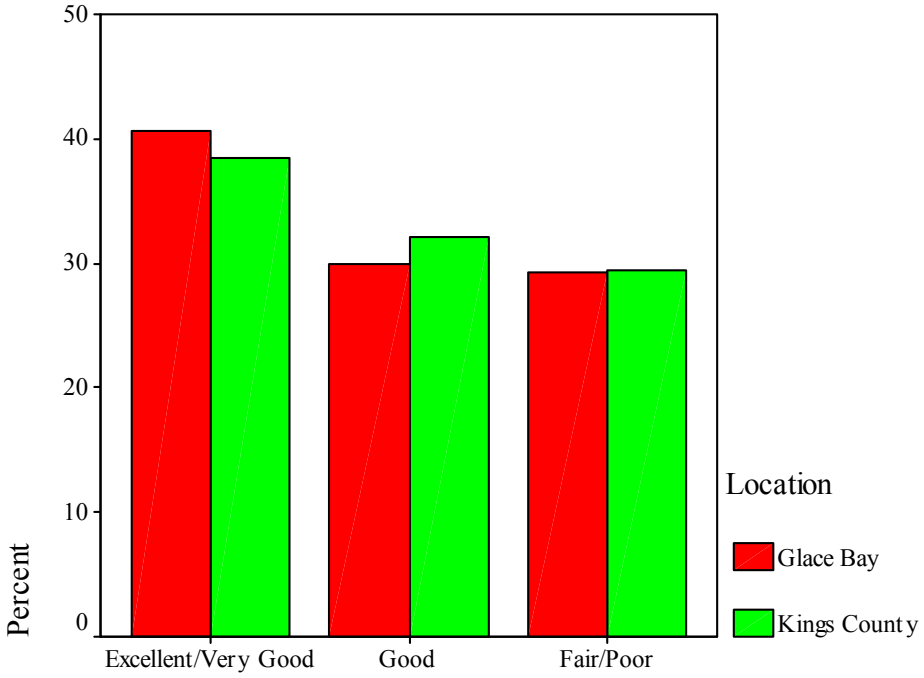
Figure 44. Marital Status

Figure 45. Perceived Health Status - Ages 15-44



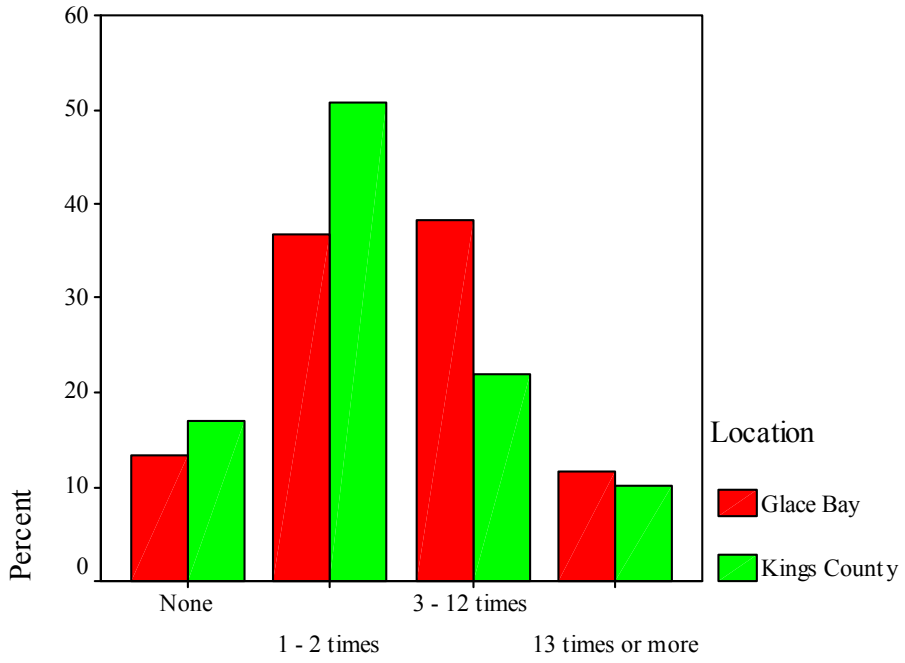
Would you say your health is...

Figure 46. Perceived Health Status - Ages 45+



Would you say your health is...

Figure 47. Physician Contact (Past Year) - Ages 15-44



p=0.004

Figure 48. Physician Contact (Past Year) - Ages 45+

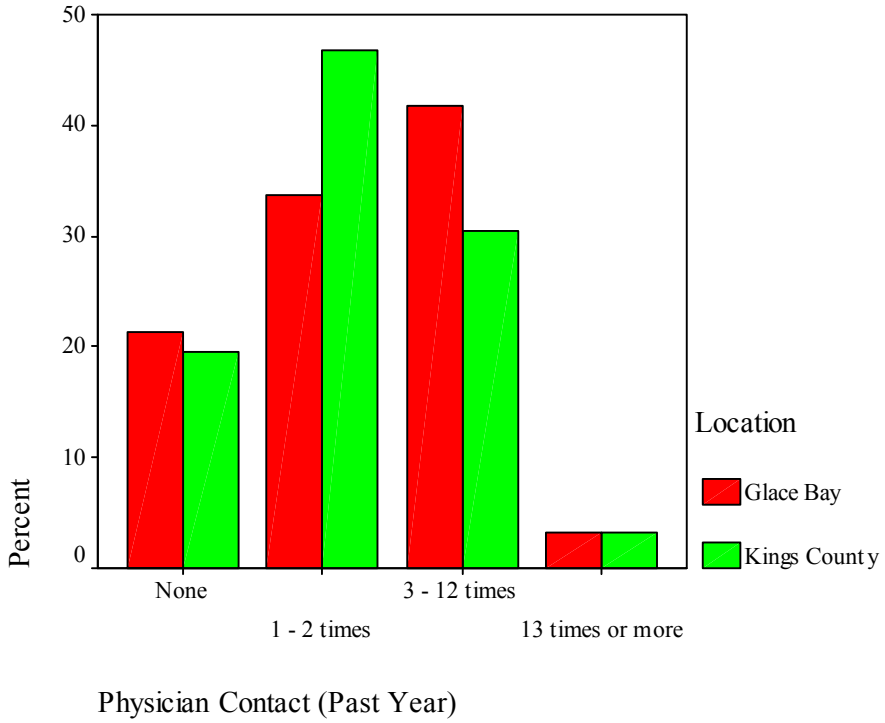


Figure 49. Contact with Other Health Professionals (Past Year): Age 15 - 44

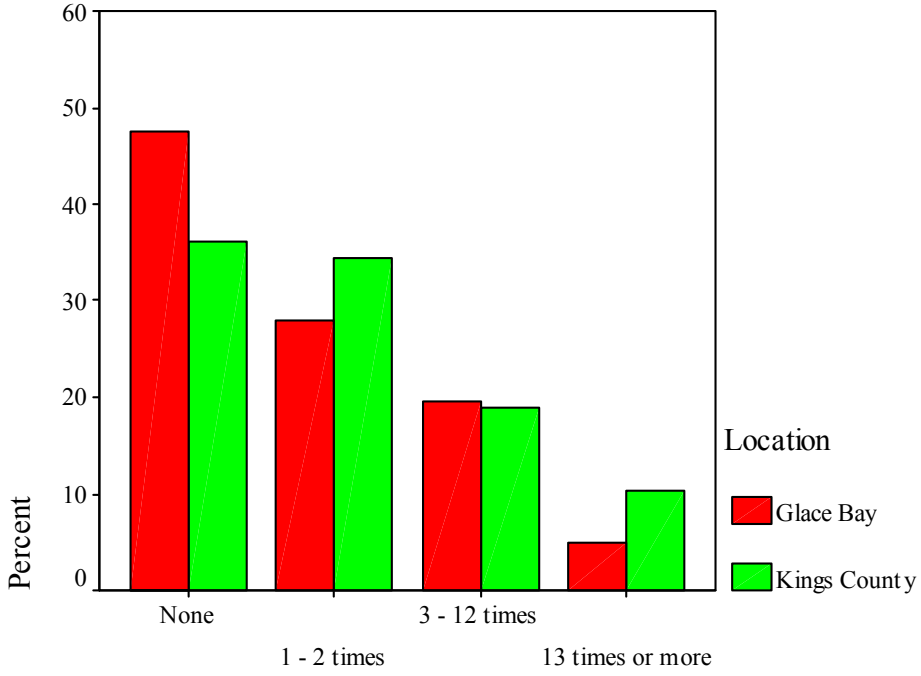
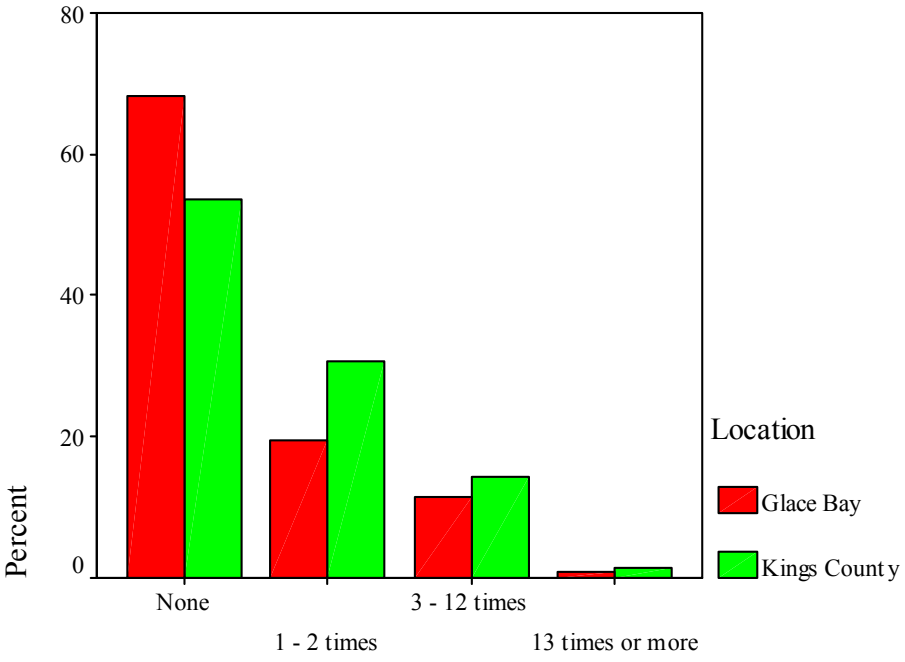


Figure 50. Contact with Other Health Professionals (Past Year): Ages 45+



p=0.000

Figure 51. Time as Overnight Patient in Hospital or Nursing Home (Past Year)

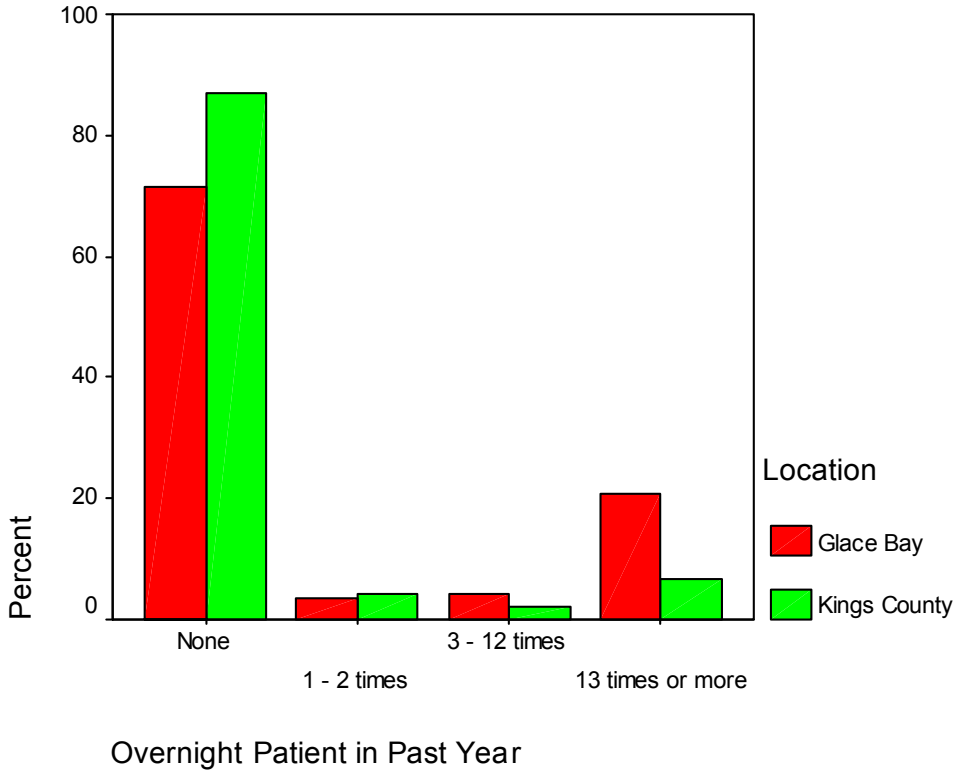


Figure 52. Visits to Emergency Room/Outpatients (Past Year)

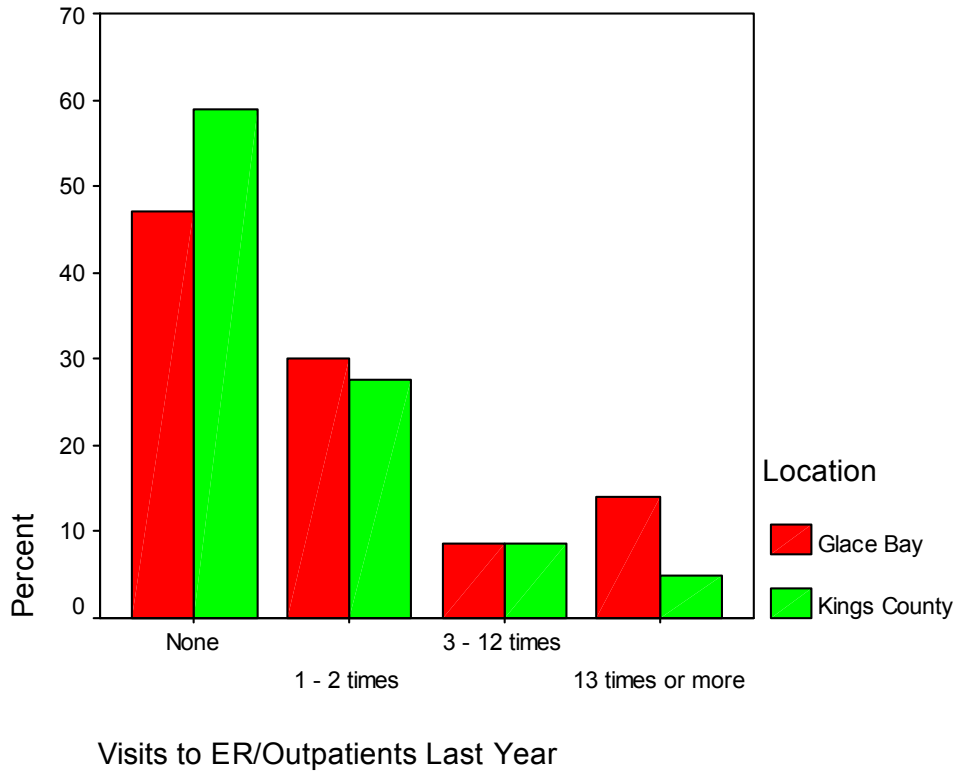


Figure 53. Consultations with a Mental Health Professional (Past Year)

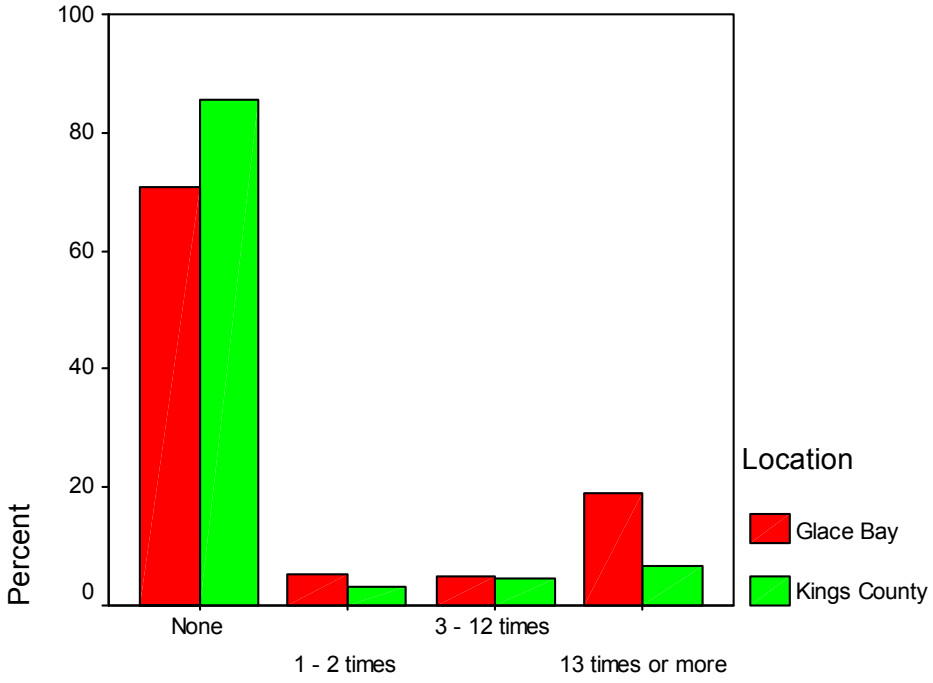


Figure 54. Pain Reliever/Anti-Inflammatory Use (Past Year) - Ages 15-44

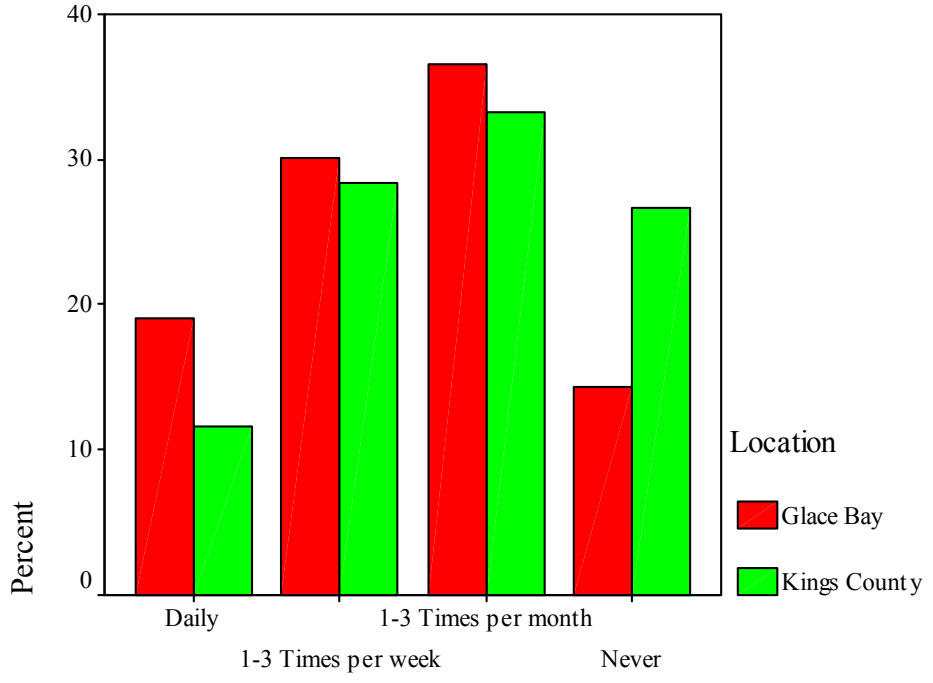
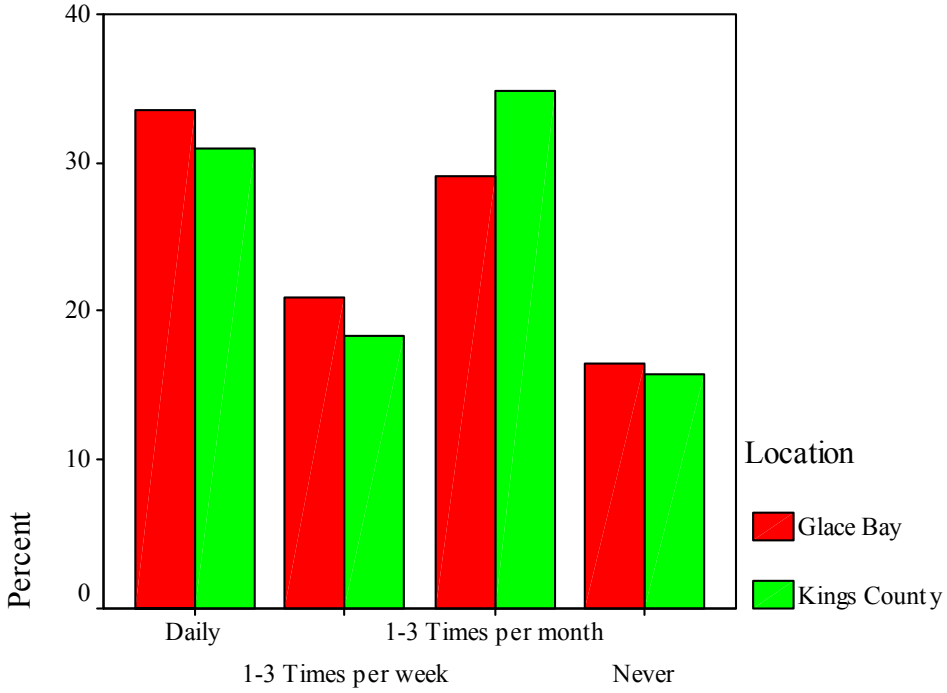
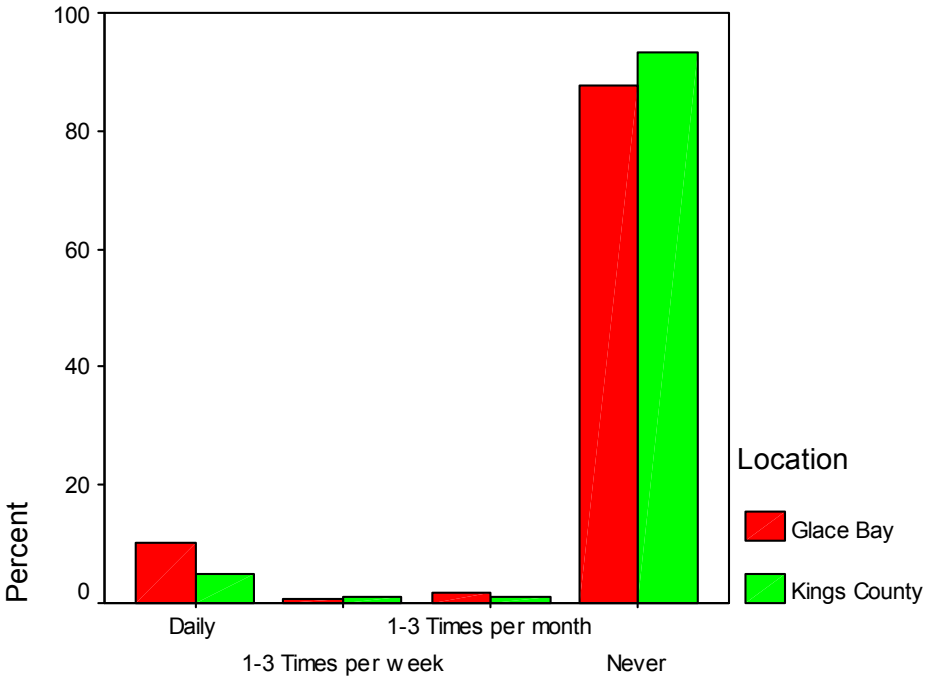


Figure 55. Pain Reliever/Anti-Inflammatory Use (Past Year) - Ages 45+



Pain relievers like aspirin, Tylenol, arthritis medicine, anti-inflammat

Figure 56. Anti-Depressant Use (Past Year)



Anti-depressant use

Figure 57. Asthma Medication Use (Past Year)

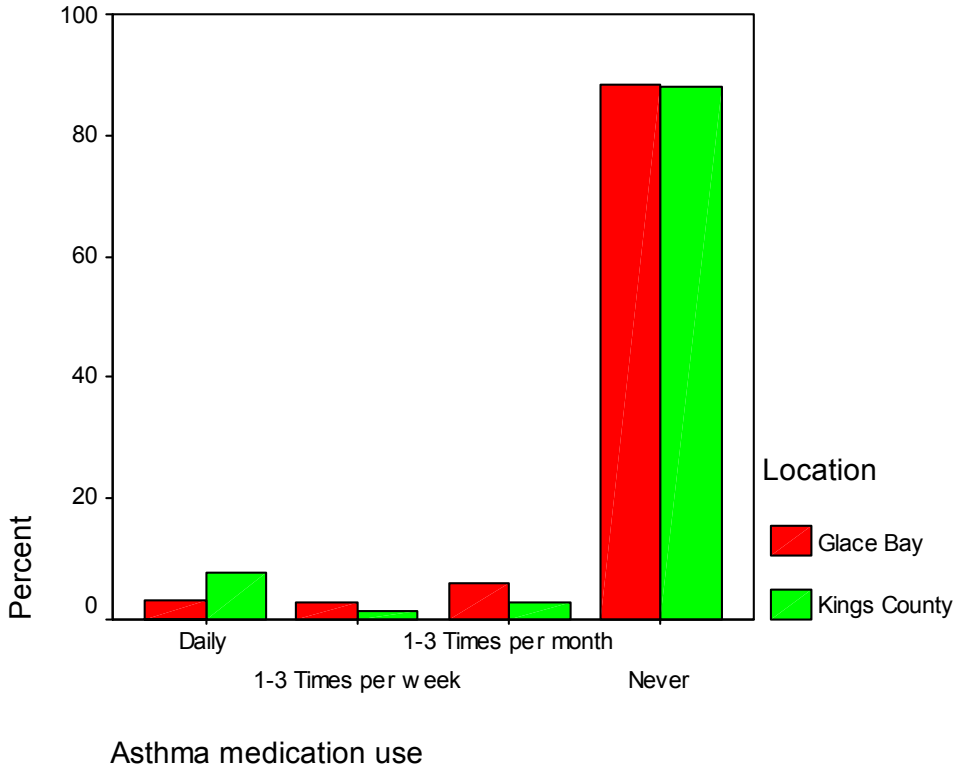
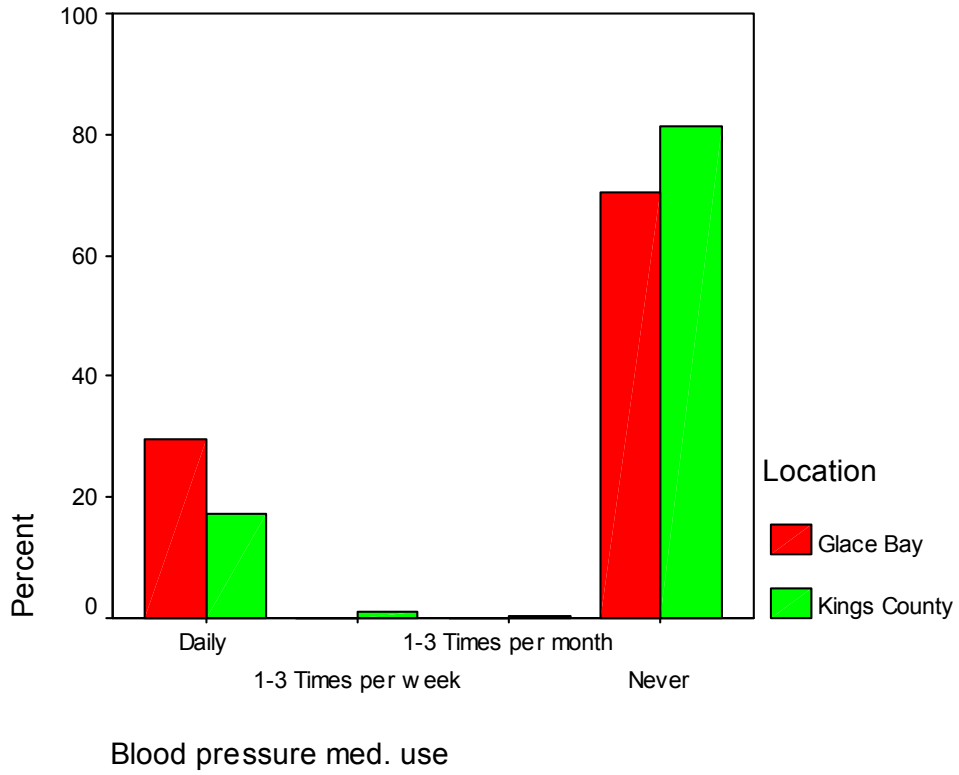


Figure 58. Blood Pressure Medication Use (Past Year



p=0.011

Figure 59. Sleeping Pill Use (Past Year)

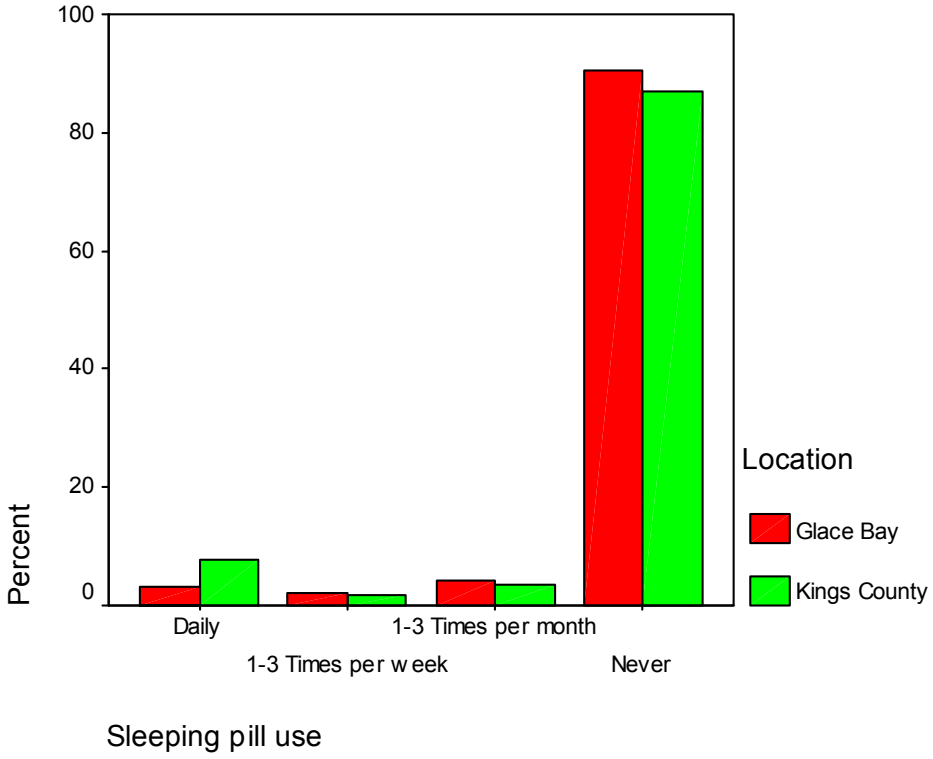


Figure 60. Stomach Remedy Use (Past Year)

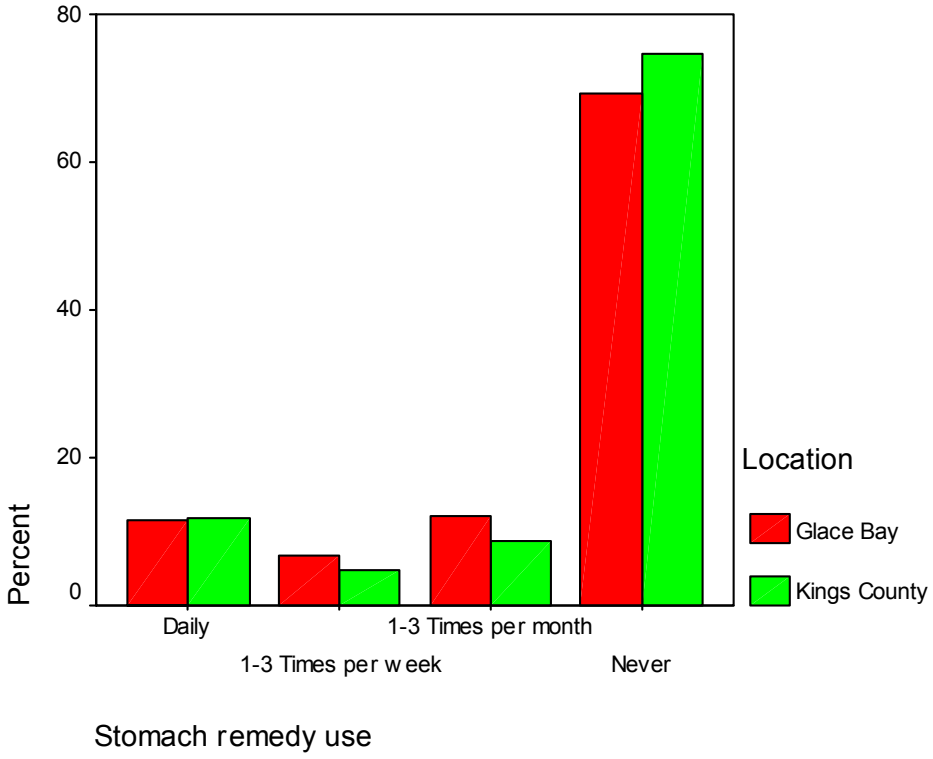


Figure 61. Activity Limitation - Ages 15-44

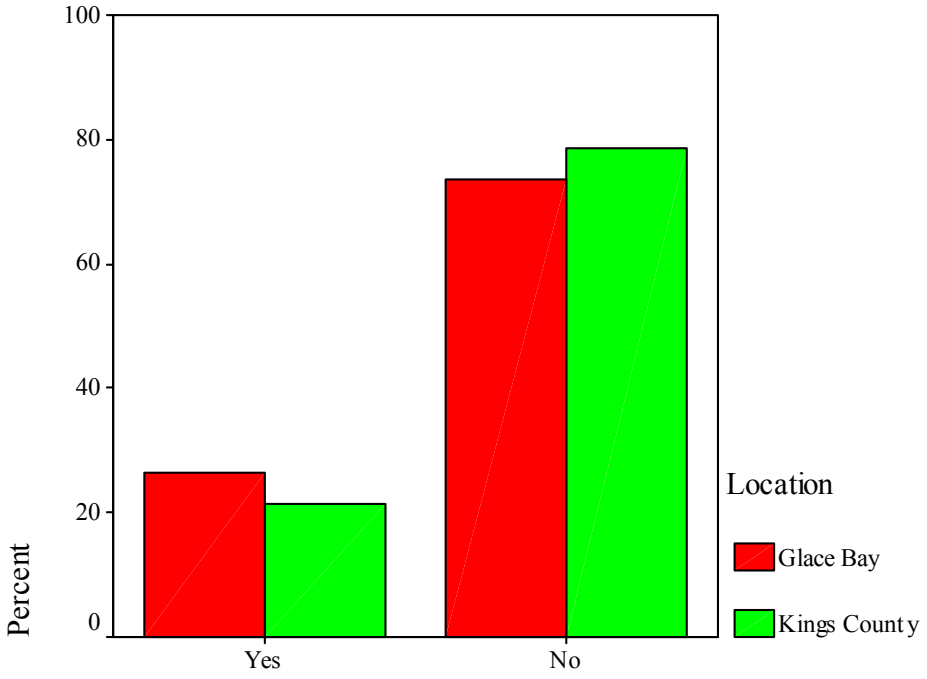


Figure 62. Activity Limitation - Ages 45+

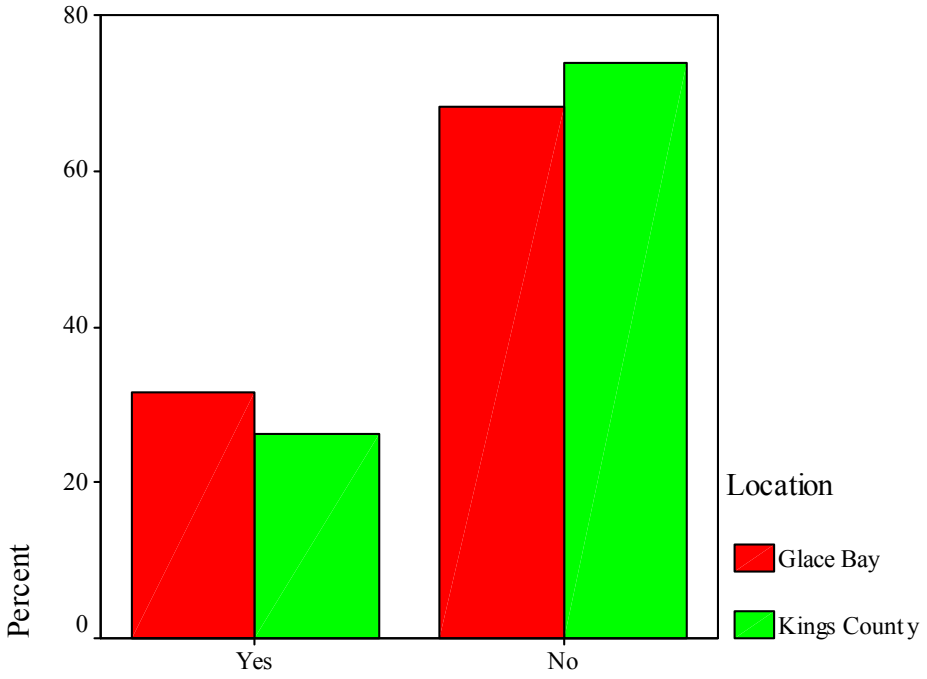


Figure 63. Amount of Exercise - Ages 15-44

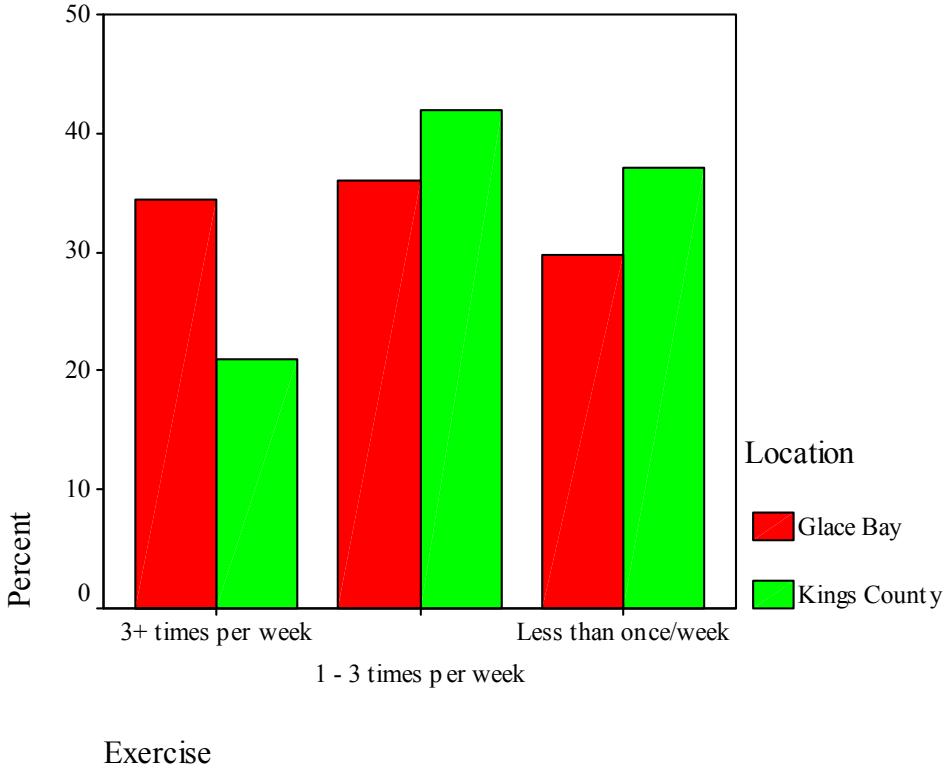


Figure 64. Amount of Exercise - Ages 45+

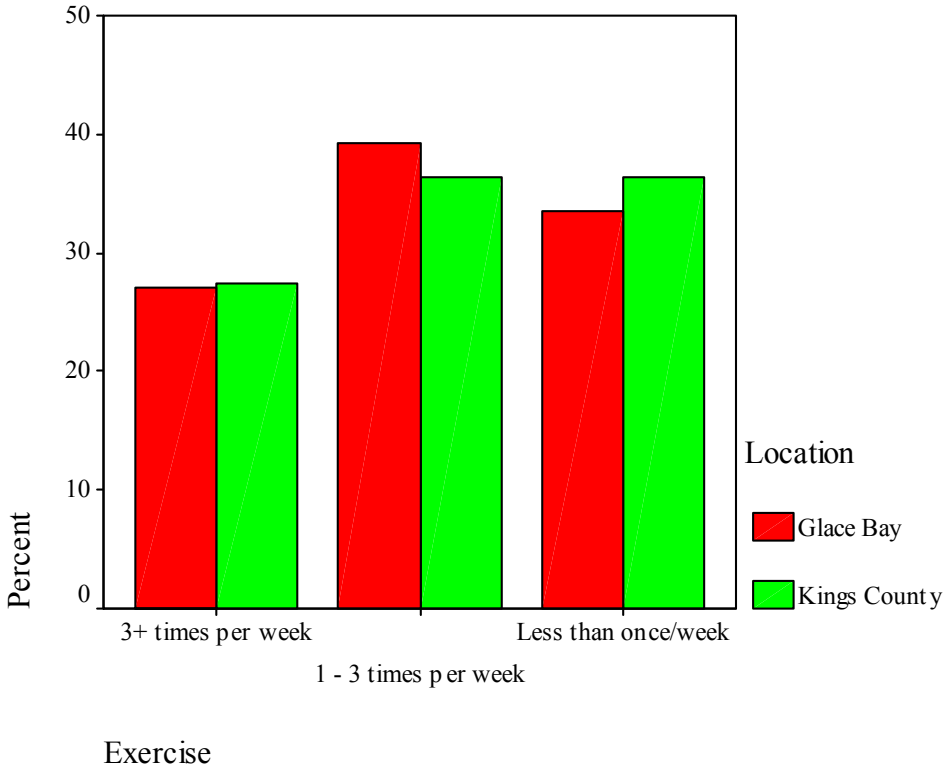
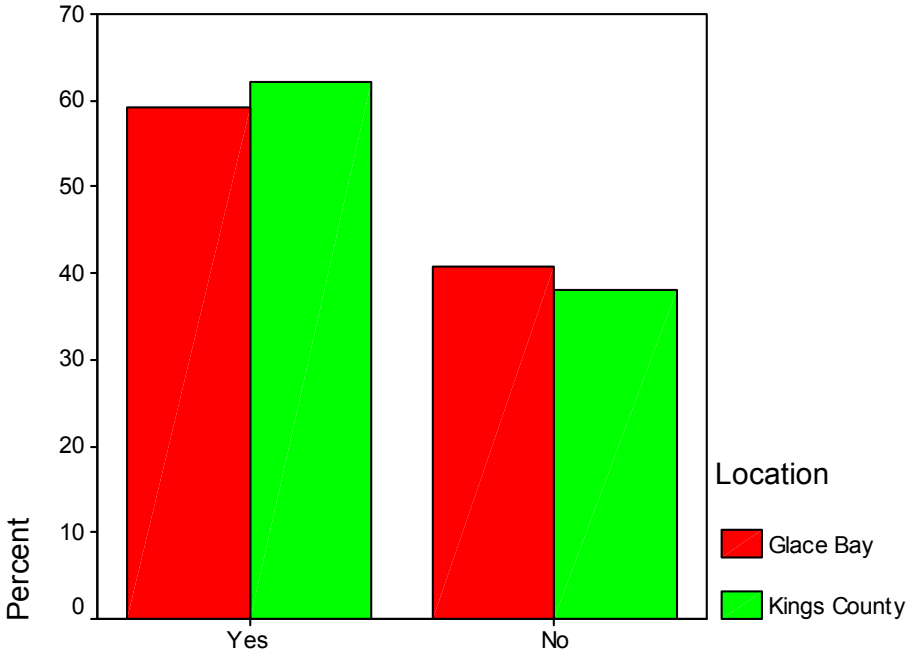
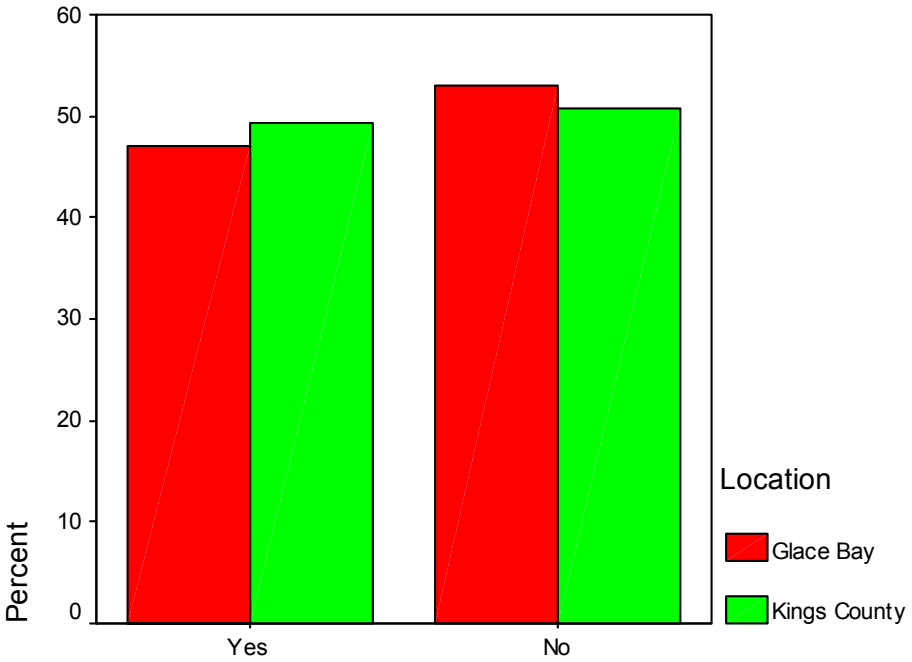


Figure 65. "At the end of the day, do you often feel that you have not accomplished what you had set out to do?"



...feel that you have not accomplished what you'd set out to dc

Figure 66. "Do you often worry that you don't spend enough time with your family or friends?"



...worry that you don't spend enough time with your family or frie

Figure 67. "Do you feel that you are constantly under stress trying to accomplish more than you can handle?"

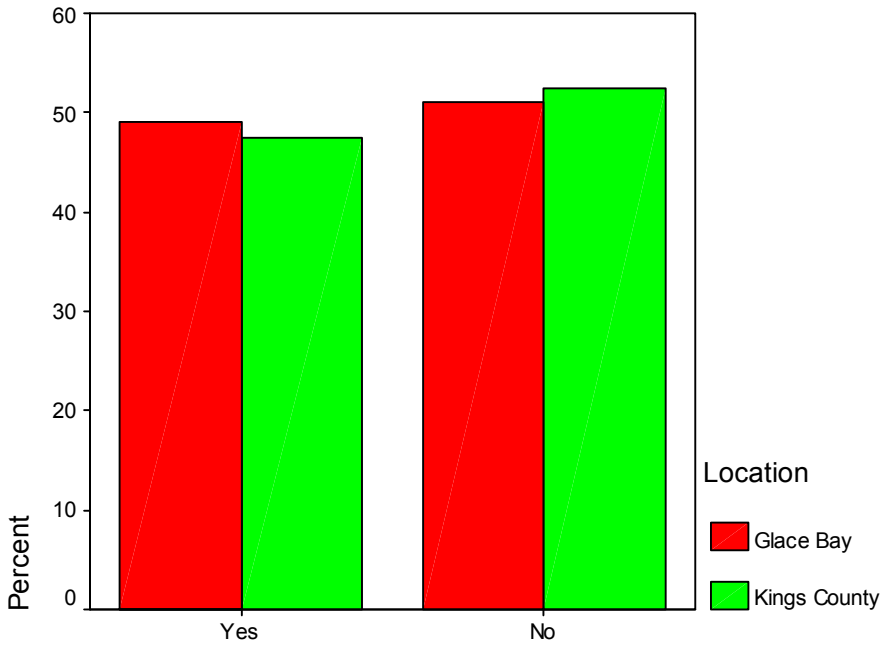


Figure 68. Contact with Neighbors (Past Year)

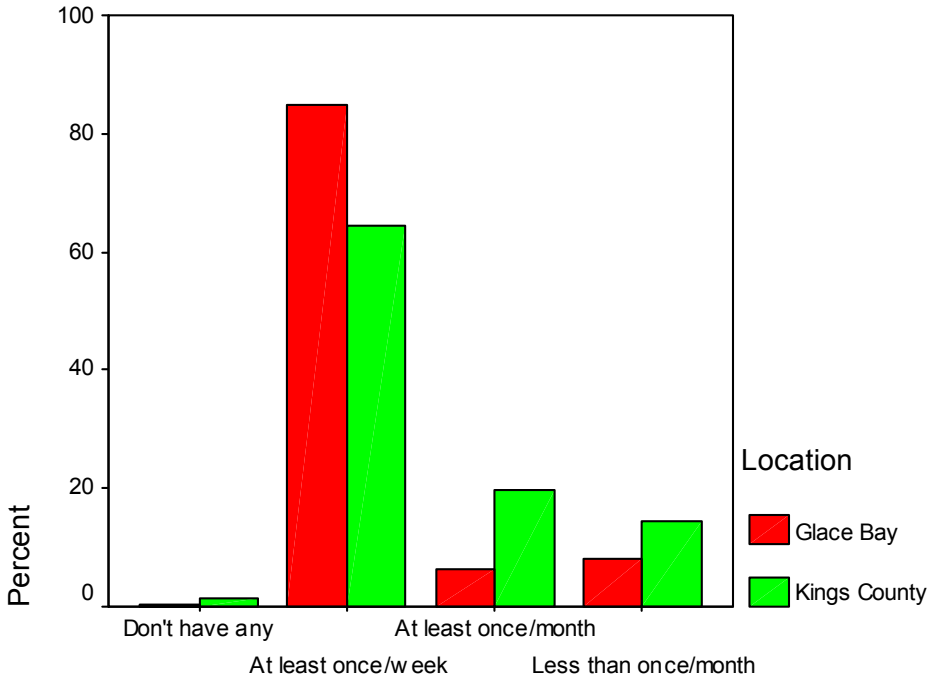
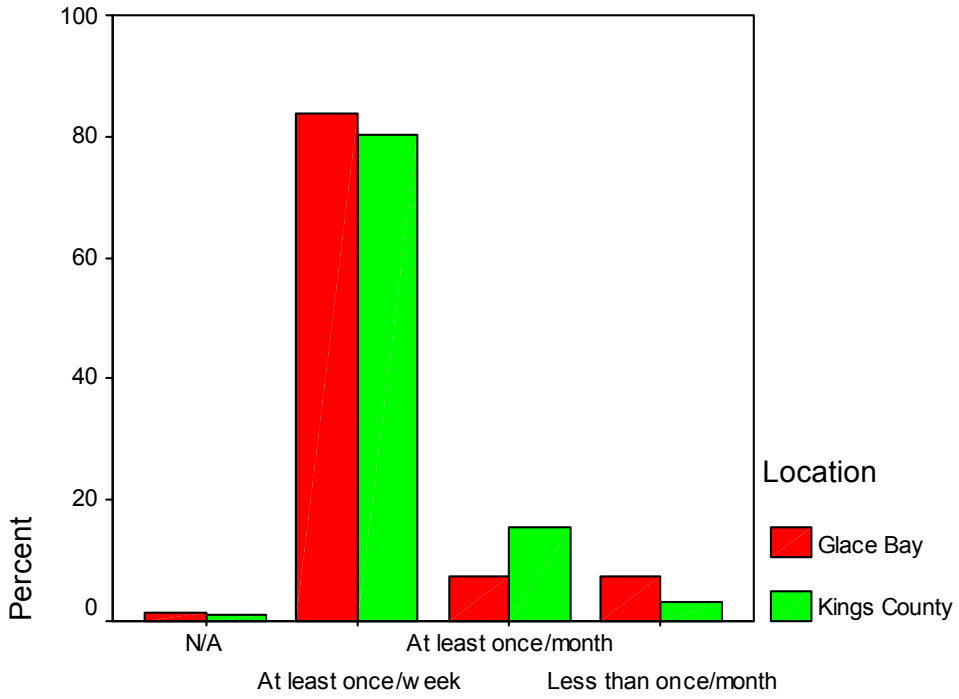


Figure 69. Contact with Non-Live-In Family (Past Year)



Contact with non-live-in family in past year

p=0.000

Appendix VI – Odds Ratios

Table 5. Perceived Health Status

	Odds Ratios	
Groups	Glace Bay	Kings County
Males/Females	0.78 (0.63-0.97)*	0.86 (0.70-1.05)
Age 15-24/65+	3.28 (1.79-6.01)*	2.07 (1.00-2.29)*
Age 25-34/65+	2.15 (1.34-3.44)*	1.87 (1.17-2.99)*
Age 35-44/65+	1.46 (0.98-2.19)	1.92 (1.27-2.90)*
Age 45-54/65+	0.87 (0.61-1.23)	1.08 (0.73-1.60)
Age 55-64/65+	0.87 (0.63-1.20)	1.28 (0.91-1.78)
Income <$10,000/$50,000+	0.40 (0.25-0.64)*	0.17 (0.11-0.28)*
Income $10,000 - $19,999/$50,000+	0.46 (0.32-0.65)*	0.45 (0.31-0.64)*
Income $20,000 - $34,999/$50,000+	0.73 (0.54-0.98)*	0.64 (0.50-0.83)*
Income $35,000 - $49,999/$50,000+	0.84 (0.60-1.16)	0.70 (0.55-0.90)*
Non-caregivers/Caregivers	1.31 ((0.98-1.74)	1.41 (1.07-1.86)*
Unemployed/Employed	0.54 (0.38-0.77)*	0.78 (0.48-1.27)
Student/Employed	0.75 (0.41-1.37)	2.96 (1.44-6.11)*
Homemaker/Employed	0.48 (0.34-0.67)*	0.64 (0.46-0.87)*
Retired/Employed	0.42 (0.30-0.58)*	0.68 (0.48-0.96)*
Grade 9-12/P-8	1.15 (0.83-1.59)	1.47 (0.97-2.23)
Comm. Coll./P-8	1.14 (0.77-1.69)	1.92 (1.22-3.03)*
University/P-8	2.06 (1.29-3.27)*	2.71 (1.70-4.34)*
Glace Bay/Kings County	1.17 (1.02-1.34)*	

* = Significant

Table 6. Activity Limitation

	Odds Ratios	
Groups	Glace Bay	Kings County
Males/Females	1.38 (1.04-1.83)*	0.99 (0.74-1.31)
Age 15-24/65+	0.37 (0.15-0.93)*	0.15 (0.04-0.66)*
Age 25-34/65+	0.82 (0.44-1.54)	0.55 (0.28-1.09)
Age 35-44/65+	1.04 (0.62-1.75)	0.81 (0.47-1.40)
Age 45-54/65+	1.93 (1.26-2.95)*	1.22 (0.73-2.02)
Age 55-64/65+	1.78 (1.22-2.61)*	0.69 (0.45-1.05)
Income <$10,000/$50,000+	2.32 (1.29-4.16)*	2.63 (1.44-4.81)*
Income $10,000 - $19,999/$50,000+	1.62 (1.01-2.58)*	1.73 (1.07-2.79)*
Income $20,000 - $34,999/$50,000+	1.04 (0.69-1.56)	1.52 (1.08-2.20)*
Income $35,000 - $49,999/$50,000+	0.98 (0.63-1.55)	1.22 (0.84-1.75)
Non-caregivers/Caregivers	0.77 (0.53-1.10)	0.77 (0.54-1.11)
Unemployed/Employed	2.53 (1.58-4.05)*	1.67 (0.88-3.12)
Student/Employed	2.07 (0.81-5.28)	0.95 (0.23-3.93)
Homemaker/Employed	3.38 (2.13-5.34)*	1.91 (1.24-2.94)*
Retired/Employed	4.49 (2.89-6.98)*	2.63 (1.65-4.21)*
Glace Bay/Kings County	1.06 (0.88-1.28)	

* = Significant

Table 7. Stress Level

	Odds Ratios	
Groups	Glace Bay	Kings County
Age 15-24/65+	5.33 (2.57-11.02)*	3.22 (1.20-8.67)*
Age 25-34/65+	2.66 (1.50-4.74)*	5.51 (2.92-10.42)*
Age 35-44/65+	3.26 (1.96-5.41)*	4.58 (2.62-8.01)*
Age 45-54/65+	2.77 (1.78-4.30)*	4.00 (2.33-6.87)*
Age 55-64/65+	1.53 (1.05-2.23)*	1.61 (1.06-2.44)*
Income <$10,000/$50,000+	4.76 (2.65-8.56)*	1.60 (0.84-3.07)
Income $10,000 - $19,999/$50,000+	2.84 (1.83-4.39)*	1.27 (0.79-2.04)
Income $20,000 - $34,999/$50,000+	1.31 (0.92-1.87)	1.21 (0.86-1.69)
Income $35,000 - $49,999/$50,000+	1.56 (1.05-2.31)*	1.03 (0.74-1.43)
Non-caregivers/Caregivers	0.39 (0.27-0.57)*	0.62 (0.43-0.91)*
Unemployed/Employed	0.78 (0.50-1.21)	1.02 (0.51-2.04)
Student/Employed	0.61 (0.30-1.24)	0.93 (0.36-2.38)
Homemaker/Employed	0.59 (0.38-0.92)*	0.91 (0.59-1.41)
Retired/Employed	0.43 (0.28-0.65)*	0.49 (0.31-0.79)*
Glace Bay/Kings County	0.76 (0.64-0.91)*	

* = Significant

Table 8. Happiness

	Odds Ratios	
Groups	Glace Bay	Kings County
Males/Females	0.78 (0.63-0.98)*	0.73 (0.59-0.90)*
Age 15-24/65+	0.61 (0.33-1.12)	0.45 (0.21-0.97)*
Age 25-34/65+	0.57 (0.35-0.95)*	0.37 (0.22-0.62)*
Age 35-44/65+	0.53 (0.34-0.82)*	0.40 (0.25-0.64)*
Age 45-54/65+	0.49 (0.33-0.73)*	0.45 (0.28-0.70)*
Age 55-64/65+	1.06 (0.73-1.55)	0.82 (0.55-1.21)
Income <$10,000/$50,000+	0.30 (0.18-0.50)*	0.71 (0.42-1.19)
Income $10,000 - $19,999/$50,000+	0.34 (0.23-0.49)*	0.65 (0.44-0.97)*
Income $20,000 - $34,999/$50,000+	0.54 (0.39-0.74)*	0.69 (0.52-0.91)*
Income $35,000 - $49,999/$50,000+	0.48 (0.34-0.68)*	0.74 (0.57-0.97)*
Non-caregivers/Caregivers	1.65 (1.21-2.25)*	1.48 (1.10-2.00)*
Unemployed/Employed	0.70 (0.49-1.01)	0.49 (0.29-0.83)*
Student/Employed	1.08 (0.61-1.91)	1.33 (0.66-2.67)
Homemaker/Employed	1.10 (0.76-1.59)	0.87 (0.62-1.22)
Retired/Employed	1.04 (0.71-1.51)	0.83 (0.56-1.23)
Grade 9-12/P-8	0.86 (0.60-1.24)	1.04 (0.66-1.62)
Comm. Coll./P-8	0.96 (0.62-1.49)	1.17 (0.71-1.90)
University/P-8	0.94 (0.57-1.54)	1.32 (0.80-2.19)
Glace Bay/Kings County	1.03 (0.89-1.19)	

* = Significant

Table 9. Depression

	Odds Ratios	
Groups	Glace Bay	Kings County
Age 15-24/65+	1.44 (0.65-3.18)	2.91 (1.04-8.12)*
Age 25-34/65+	1.39 (0.69-2.79)	3.20 (1.50-6.85)*
Age 35-44/65+	2.19 (1.19-4.05)*	2.78 (1.37-5.64)*
Age 45-54/65+	1.88 (1.07-3.32)*	2.27 (1.13-4.54)*
Age 55-64/65+	1.56 (0.91-2.66)	1.44 (0.77-2.69)
Income <$10,000/$50,000+	3.60 (1.94-6.70)*	1.99 (1.05-3.76)*
Income $10,000 - $19,999/$50,000+	2.48 (1.47-4.19)*	1.44 (0.84-2.48)
Income $20,000 - $34,999/$50,000+	1.85 (1.17-2.93)*	1.53 (1.03-2.27)*
Income $35,000 - $49,999/$50,000+	2.13 (1.32-3.45)*	1.25 (0.85-1.85)
Non-caregivers/Caregivers	0.77 (0.52-1.14)	0.80 (0.53-1.22)
Unmarried/Married-Common Law	1.34 (0.97-1.86)	1.46 (1.01-2.11)*
Unemployed/Employed	1.63 (1.03-2.58)*	1.61 (0.85-3.04)
Glace Bay/Kings County	1.05 (0.86-1.29)	

* = Significant

Table 10. Satisfaction

	Odds Ratios	
Groups	Glace Bay	Kings County
Males/Females	0.79 (0.63-1.00)	0.69 (0.56-0.85)*
Age 15-24/65+	0.54 (0.28-1.02	0.68 (0.32-1.48)
Age 25-34/65+	0.50 (0.27-0.75)*	0.37 (0.22-0.62)*
Age 35-44/65+	0.35 (0.22-0.55)*	0.34 (0.21-0.53)*
Age 45-54/65+	0.42 (0.28-0.63)*	0.33 (0.21-0.52)*
Age 55-64/65+	0.76 (0.53-1.08)	0.74 (0.51-1.07)
Income <$10,000/$50,000+	0.15 (0.09-0.27)*	0.62 (0.36-1.07)
Income $10,000 - $19,999/$50,000+	0.27 (0.19-0.40)*	0.54 (0.36-0.80)*
Income $20,000 - $34,999/$50,000+	0.49 (0.36-0.67)*	0.64 (0.48-0.85)*
Income $35,000 - $49,999/$50,000+	0.43 (0.31-0.60)*	0.62 (0.48-0.81)*
Non-caregivers/Caregivers	1.73 (1.24-2.39)*	1.31 (0.96-1.79)
Unmarried/Married-Common Law	0.62 (0.48-0.80)*	0.57 (0.43-0.76)*
Unemployed/Employed	0.69 (0.46-1.02)	0.33 (0.17-0.63)*
Glace Bay/Kings County	1.30 (1.12-1.50)*	

* = Significant

Table 11. Physician Contact

	Odds Ratios	
Groups	Glace Bay	Kings County
Males/Females	0.67 (0.55-0.83)*	0.66 (0.55-0.80)*
Non-caregivers/Caregivers	0.77 (0.57-1.02)	1.02 (0.78-1.34)
Employed/Unemployed	1.54 (1.09-2.17)*	1.02 (0.63-1.67)
Student/Unemployed	1.02 (0.61-1.73)	1.07 (0.56-2.03)
Homemaker/Unemployed	1.34 (0.95-1.88)	1.23 (0.90-1.66)
Retired/unemployed	1.66 (1.19-2.33)*	1.61 (1.14-2.28)*
Glace Bay/Kings County	1.02 (0.89-1.16)	

* = Significant

Table 12. Mental Health Professional Contact

	Odds Ratios	
Groups	Glace Bay	Kings County
Age 15-24/65+	4.58 (1.07-19.5)*	1.99 (0.40-9.80)
Age 25-34/65+	8.98 (2.50-32.3)*	4.54 (1.31-15.7)*
Age 35-44/65+	5.98 (1.73-20.7)*	5.86 (1.85-18.6)*
Age 45-54/65+	8.23 (2.59-26.1)*	5.46 (1.76-16.9)*
Age 55-64/65+	4.81 (1.51-15.3)*	1.95 (0.68-5.57)
Income <$10,000/$50,000+	2.42 (1.01-5.82)*	1.39 (0.55-3.50)
Income $10,000 - $19,999/$50,000+	1.83 (0.84-3.89)	2.04 (1.02-4.08*
Income $20,000 - $34,999/$50,000+	1.05 (0.51-2.15)	1.70 (1.00-2.90)*
Income $35,000 - $49,999/$50,000+	1.10 (0.51-2.34)	1.37 (0.81-2.32)
Non-caregivers/Caregivers	0.61 (0.35-1.05)	0.65 (0.38-1.10)

* = Significant