Running Head: Intermarriage and Social Support

# Intermarriage and Social Support in Middle and Later Life

Margaret J. Penning[1]

Zheng Wu[2]

[1] Centre on Aging & Department of Sociology, University of Victoria, PO Box 1700 STN CSC, Victoria, BC, V8W 2Y2, Canada; phone 1-250-721-6573, fax 1-250-721-6499, email mpenning@uvic.ca

[2]Department of Sociology, University of Victoria, PO Box 1700 STN CSC, Victoria, BC, V8W 2Y2, Canada; phone 1-250-721-7576, fax 1-250-721-6217, email zhengwu@uvic.ca

**Key words:** Canada, intermarriage, late life, middle age, social support, racial minority

**Intermarriage and Social Support in Middle and Later Life**

## Abstract

Despite widespread attention to population aging and contemporary increases in intermarriage, little is known regarding the implications of intermarriage for social support in middle and later life. Drawing on data from the 2007 General Social Survey (GSS-21) conducted by Statistics Canada on intermarried and endogamously married adults aged 45 and over ($N$ = 12,345), this study examined the effects of intermarriage on the receipt of instrumental and emotional support. Results, generated by two simultaneous probit models, revealed that while intermarriage was accompanied by a reduced likelihood of instrumental support from others outside the household, this was not the case when it came to emotional support. The findings indicate that intermarriage is not uniformly positive, neutral, or negative in its implications for social support. Future theoretical and empirical work will need to address the complexities of these and other relationships in order to enhance our understanding of these emergent family structures.

## Intermarriage and Social Support in Middle and Later Life

Recent demographic trends in the United States and Canada, like those in other developed countries, include the aging of the population as well as shifts to the ethnic composition of the population due to changing immigration patterns. The former is increasing the number of people in their later years of life and with it, attendant requirements for social support and care. The latter is having an impact on marital and family structures, institutions within which needs for social support and care tend to be met. This includes the nature and extent of intermarriage. In the United States, interracial marriage rates increased from less than 1% of all marriages in 1970 to 1.8% in 1990 and nearly 3.9% in 2008 (US Census Bureau, 2012). In Canada, the rate of intermarriage (mixed union) increased from 2.6% of all unions in Canada in 1991 to 3.1% in 2001 and 3.9% in 2006 (Statistics Canada, 2008). Similar trends have been observed in other Western multiethnic societies (Fields & Casper, 2001; Fincham & Beach, 2010; Song, 2009).

At present, intermarriage is more common among younger than older adults (Lee & Edmonston, 2005; Milan & Hamm, 2004), likely reflecting more recent changes in laws, attitudes, and norms regarding intermarriage. Nevertheless, the increasing prevalence of intermarriage represents but one of a series of changes to family structure being experienced by middle-aged and older cohorts currently entering into and transitioning through the later years of life, which are likely to influence their access to familial and other resources for support and care as they age (Silverstein & Giarrusso, 2010). Others include increases in childlessness, divorce, remarriage, and stepfamily formation, all of which may influence current and future access to spousal, intergenerational, and other familial (as well as non-familial) supports (Silverstein &

Giarrusso, 2010). Such changes suggest that today's middle-aged and older adults are likely to have more diverse family networks than previous generations (Wachter, 1997). Thus, insofar as intermarriage influences access to sources of support and care, increases in intermarriage raise important questions about the future well-being of older adults.

Despite considerable interest in the implications of changes in family structure for the provision of support and care as people age, we know little about those associated with intermarriage. Although extensive research has addressed patterns and trends in intermarriage in the United States (Fu, 2001; Gullickson, 2006; Kalmijn & van Tubergen, 2010; Qian & Lichter, 2011), Canada (Hamplová & Le Bourdais, 2010; Lee & Boyd, 2008), Europe (Gonzalez-Ferrer, 2006; Kalmijn & Van Tubergen, 2006; Monden & Smits, 2005; Roy & Hamilton, 2000), and elsewhere (Okun, 2001), much less research has examined its implications (Kalmijn, 2010). In addition, where the implications of intermarriage have been addressed, the focus tends to be on the development of ethnic and racial identities (Lee & Bean, 2004; Qian, 2004), psychological distress (Bratter & Eschbach, 2005), or marital stability and divorce (Bramlett & Mosher, 2002; Bratter & King, 2008; Fu & Wolfinger, 2011; Phillips & Sweeney, 2006; Zhang & van Hook, 2009) rather than to issues of social support and care (Kalmijn, 2010).

Given that the social networks of older people are largely composed of family members, understanding how trends in family life may affect future support and care is an issue of considerable significance (Askham, Ferring & Lamura, 2007). To address this issue in the context of intermarriage, the current study seeks to explore its impact on access to two key dimensions of social support (instrumental, emotional) and thereby contribute to theoretical and empirical understanding within these domains. For example, current theorizing on the implications of the increasing diversification of family structures within contemporary Western

societies has suggested that greater acceptance and tolerance of diverse family forms means that the previously negative impact of such changes for support in later life may be disappearing (Thornton & Young-DeMarco, 2001). Along similar lines, theoretical accounts of intermarriage trends frequently consider them to be a reflection of the successful integration (current, potential) of diverse ethnic and racial minority groups within society (Kalmijn, 2010), although others contend that strong norms against ethnic and racial intermarriage persist and are likely to influence access to social support and other resources within such structures (Song, 2009).

**Marriage and Social Support in Middle and Later Life**

There is a considerable literature on the relationship between marital status and patterns of support, particularly in later life (Glaser, Stuchbury, Tomassini & Askham, 2008a). The family is widely acknowledged as being the major source of interpersonal support and care in old age and indeed, throughout the life course (Chappell & Funk, 2011; Keating, Fast, Frederick, Cranswick, & Perrier, 1999). There is some debate regarding the relative importance of the spouse and children when it comes to the provision of support and care to those in later life, based largely on evidence indicating that the most prevalent providers of care to 'frail' elderly individuals tend to be children, followed by spouses, and then others (e.g., Wolff & Kasper, 2006). However, married individuals are likely to name their spouse as a confidante or source of emotional support, particularly among men (Chappell, McDonald & Stones, 2010). It has also been reported that spouses, if available, are the most likely to provide social support and care and to do so during periods of greater illness and disability than any other caregiver (Lima, Allen, Goldscheider, & Intrator, 2008; Spillman & Pezzin, 2000; Walker & Luszcz, 2009). Spouses are also reported to provide more hours of instrumental support and care (Keating et al., 1999; Wolff

& Kasper, 2006), and to be less likely to relinquish care provision (Seltzer & Li, 2000) than other informal helpers (Noël-Miller, 2011). Over 80% of married middle-aged and older adults with health-related needs for support and care have been found to report that their primary caregiver was their spouse (Barrett &Lynch, 1999; Walker & Luszcz, 2009).

However, the marital relationship appears important not only with regard to the direct provision of support and care but also because it facilitates access to similar resources from children and others within the informal social network (Waite, 2009). For example, approximately one-third of all spousal caregivers report receiving assistance from secondary support resources, primarily adult children but also relatives and friends (Wolff & Kasper, 2006). In addition, while it has been reported that widowhood may not adversely affect the receipt of social support, particularly among women (Barrett & Lynch, 1999; Glaser, Tomassini & Stuchbury, 2008b, Ha, 2008), findings suggest that other marital and family disruptions (e.g., divorce and remarriage) experienced over the life course tend to weaken intergenerational and other family ties and thereby tend to have deleterious consequences for the social support available at older ages, particularly for men (Barrett & Lynch, 1999). This includes the support available from adult children. It has been widely reported that, in comparison with those in intact marriages, divorce and remarriage tend to result in decreased contacts, quality of relationships with adult children, as well as perceived support from children and others (Curran, McLanahan & Knab, 2003; Kalmijn, 2007; Pezzin, Pollak & Schone, 2008). It should be noted, however, that not all studies link marital dissolution to declines in social support within old age (Glaser et al., 2008a, 2008b).

**Intermarriage and Social Support**

While marriage in general appears beneficial when it comes to people's access to social support as they age, it is less clear if this is the case across all kinds of marriages and more specifically, racial and ethnic minority intermarriages. Despite the lack of explicit research attention to the implications of intermarriage for social integration and support, a number of different perspectives can be inferred from existing literature. The first is implied by literature that suggests that intermarriages tend to involve individuals from ethnic backgrounds (e.g., Japan, Latin America, Blacks) in which traditional cultural norms (e.g., filial responsibility) are widely regarded as being particularly conducive to the provision of support to older members (see Silverstein, Gans & Yang, 2006). To the extent that these normative expectations are generalized to intermarriage relationships, the assumption would seem to be that those involved will be advantaged relative to those involved in endogamous unions that do not follow such cultural norms. Similar expectations are generated by the view that intermarriage is indicative of the successful integration of diverse racial and ethnic minority groups within society (Kalmijn, 2010). From this perspective, intermarriage is widely regarded as a good, if not the best, indicator of the erosion of social distance and integration of racial and ethnic minorities in society (e.g., see Alba & Nee, 2003; Qian & Lichter, 2007). It is said to signify that individuals of different backgrounds do not perceive sufficient social and cultural differences to prevent them from forming a long-term union and that marital partners therefore accept each other as social equals (Hamplova & Le Bourdais, 2010). Thus, increases in the number of racial and ethnic minority intermarriages are interpreted as evidence that group boundaries have weakened, intergroup social distance has declined, and acceptance of minorities has increased (Kalmijn, 1998; Qian & Lichter, 2007).

To the extent that intermarriage is considered an indicator of already completed or successful social integration, the implication would seem to be that it should be accompanied by comparable (if not improved) levels of access to support from individuals (family members, friends, and others) outside the marital relationship. Yet, the assumption that societal level integration translates into supportive relationships at the individual level may well be problematic (e.g., Song, 2009). For example, it may be that ethnic and racial minority intermarriages should be viewed as contributing to future integration rather than as an indication of already achieved integration within society (Hamplova & Le Bourdais, 2010). Thus, while there is evidence to suggest the growing acceptance of intermarriage particularly among younger people (Fang et al., 1998; Joyner & Kao, 2005), a number of recently conducted studies document continuing strong opposition to intermarriage (e.g., Childs, 2005; Fu & Wolfinger, 2011; Romano, 2003; Root, 2001) and the difficulties often faced by those who intermarry (e.g., Killian, 2003; Lewis & Yancey, 1995; Root, 2001). It has been noted that strong norms against racial and ethnic intermarriage persist and that while marital partners themselves may not adhere to such norms, the families and broader social networks to which they belong may be less supportive (Bratter & Eschbach, 2006; Kalmijn, 2010; Tzeng, 2000). Consistent with such claims, some research findings indicate that young adults in such relationships receive less social support from families and friends than do those in racially homogamous unions (Wang, Kao, & Joyner, 2006) and that such relationships are more likely to dissolve at various stages of the life course (Bratter & King, 2008; Kalmijn, de Graaf, & Janssen, 2005).

**The Present Study**

The above-noted review suggests a need to focus theoretical and empirical attention on the implications of racial/ethnic intermarriage for the receipt of social support among middle-

aged and older adults. We begin by addressing the implications of racial/ethnic intermarriage on the receipt of both instrumental and emotional support among middle-aged and older adults. Next, given previous evidence indicating that the consequences of intermarriage are likely to vary depending upon social factors (e.g., see Bratter & Eschbach, 2005; Bratter & King, 2008; Song, 2009), we turn our attention to empirical investigation of whether the impact of intermarriage on the receipt of support varies by gender, racial minority status, and their interaction. That is, do women fare as well as men in such relationships? Do endogamously married (in-married) racial minorities fare as well as their non-minority counterparts? Finally, does the effect of intermarriage depend on whether the male or female partner is a racial minority? Recent findings, primarily obtained from studies of Black/White intermarriages, suggests that the "stigmas attached to interracial interaction are strongly gendered as well as racially specific" (Bratter & King, 2008:170). As a result, the issues that serve to undermine support from family members and friends may be more severe among selected intersections involving gender and racial minority status (e.g., for White female/Black male couples or White female/Asian male marriages – see Bratter & King, 2008).

## Data and Methods

*Data*

Our empirical analysis used data from the 2007 General Social Survey, Cycle 21 (GSS-21), conducted by Statistics Canada. The GSS program is an annual national (cross-sectional) survey that collects individual- and household-level data on Canadian adults to monitor social conditions and wellbeing of Canadians (Statistics Canada, 2009). Each cycle of the GSS has one thematic focus, such as family, time-use and victimization. The GSS-21 focuses on social

support and aging. It collected detailed information on social support, health conditions, family history, retirement planning and experience, and standard demographic and socioeconomic information.

Because of the aging focus, the target population of the GSS-21 was limited to Canadians aged 45 and over living in all ten provinces, except for Canadians living in the northern territories and full-time residents of institutions. The survey was conducted through telephone interviews. Households without telephones were excluded, but represented 0.9% of the target population (Statistics Canada, 2009). Moreover, individuals with cellular phone service only were also excluded; they accounted for 6.4% of the population. Our survey estimates were adjusted using weights to represent all persons in the target population (see Statistics Canada, 2009 for details).

The GSS-21 includes a nationally representative sample of 23,404 Canadians aged 45 and over. The overall response rate was 57.7%. To study intermarriage and social support, we restricted our study sample to respondents who were currently married or cohabiting. We include cohabitation because it has become a common path of entry into conjugal relationships (Kennedy & Bumpass 2008; Kerr, Moyser & Beaujot, 2006). Because our analytical model considers selection into intermarriage (or cohabitation), we excluded immigrants whose current marriage (cohabitation) began before they immigrated to Canada, as they were not exposed to Canadian marriage markets (see below). To reduce the complexity of the analyses and be consistent with the literature on intermarriage (Qian & Lichter, 2011), unions that involved aboriginal partners were also excluded. With these restrictions, our final study sample includes 249 intermarried (cohabiting) and 11,935 endogamously married (cohabiting) individuals ($N$ = 12,184).

*Measures*

As noted, our empirical analysis focuses on receipt of social support. A functional definition of social support is employed which emphasizes the supportive resources that are available through one's social network. Thus, we examine two primary dimensions of receipt of support: instrumental and emotional support. We used four dummy variables to indicate receipt of support in the areas of domestic help, caring for family members, transportation assistance, and emotional support. The measure of domestic help is based on the following questions in the GSS-21: "In the past 12 months, did anyone help you by doing domestic work, home maintenance or outdoor work?" Respondents were instructed to focus on unpaid help and to exclude help provided by those living with them as well as that provided by organizations. For respondents who provided a negative response (i.e., did not need help), they were then asked, "(In the past 12 months), if you had needed help (with these activities), would you have had someone to turn to for help with (domestic work, home maintenance or outdoor work)?" Using the responses from these questions, we created a dummy variable, contrasting those who provided a positive response to either question to others. Using the responses to similar questions on "taking care of family members (including children and seniors)" and on "providing transportation or running errands," we also constructed two dummy variables for caring for family members and transportation assistance, respectively.

The measure of emotional support is based on responses to a single question: "In the past 12 months, did anyone help you by giving you emotional support?" Again we created a dummy variable to indicate the receipt of emotional support in the past year. The extent of non-response (missing values) to these questions is generally low (about 2% or less) except for caring family members (7.7% nonresponses). In an unreported analysis, we found that the likelihood of

missing on receiving family care is unrelated to whether one is intermarried or endogamously married. The cases with missing values on response variables were removed from the analysis. Table 1 presents variable definitions and descriptive statistics for the dependent and independent variables used in the analyses. Overall, we observe that persons in mixed unions appear to have received less instrumental support but more emotional support then persons in endogamous unions.

<Table 1 about here>

Our independent variable is intermarriage (mixed union), which was measured as a dummy variable indicating whether the respondent has a partner who belongs to a different racial minority grouping (white or non-white). The reference group includes all endogamously married (cohabiting) individuals, including minority unions where both partners belonged to different ethnic groupings (e.g., Chinese, South Asian, Korean, Japanese, and Black). Although we were unable to identify unions in which both partners were from different racial minority groups, such unions are known to be uncommon (Fryer, 2007; Myles & Hou, 2009).

We consider four demographic control variables. Respondents' gender and racial minority status were coded as dummy indicators. We observe that less than 5% of persons in endogamous unions are in unions where both partners are members of racial minorities. Age was measured as an 8-level ordinal variable. Immigrant status was also coded as a dummy variable. Compared to the in-married, the out-married appear to be younger, and more likely to be immigrants (44% vs. 16%).

We include four marital (union) variables. One dummy variable indicates whether the union was a cohabiting union (vs. marriage). Another dummy variable identifies whether the union was a second or a higher-order union (either marital or nonmarital). The duration of union

was measured in years. The number of children ever raised by the respondent was included as a continuous variable. Overall, compared to the in-married, the out-married are more likely to be cohabitors, to live in the second or higher-order union, to have shorter durations of union and to have fewer children.

We consider three health indicators. Self-reported health is known to be a robust indicator of general health for the general and elderly population (e.g., Mossey & Shapiro, 1982). It was measured as an ordinal variable ranging from poor (1) to excellent (5). Activity limitation is a dummy variable, indicating whether the respondent is limited in the amount/kind of regular activity at home, work, or in other activities due to a physical or mental condition, or health problem. The presence of chronic conditions is also a dummy variable, indicating the presence of any chronic condition (e.g., arthritis or rheumatism, back problems, diabetes, Alzheimer's disease, heart disease, or cancer). All three indicators suggest that out-married persons have better health than the in-married, probably due to their younger age profiles.

Socioeconomic variables include: educational attainment (in 10 levels), employment status, household income (in 12 levels), home ownership, and length of residence (years of living in the current residence). We observe that compared to the in-married, out-married persons are more likely to be working outside the home, have higher household incomes, but are less likely to own their homes and have shorter periods of living in the current residence.

*Statistical Models*

Our study examines the effects of intermarriage (mixed union) on receipt of social support. Intermarriage is evidently endogenous because individuals in mixed unions are generally self-selected (Kalmijn, 1998). If the decision to enter a mixed union is correlated with

social support, then the effect of mixed union on social support may be biased (see Greene, 2012). For example, if people who choose to out-marry are more open and universalistic and these attributes are also associated with an increased likelihood of receiving support when needed, then the potential negative effect of mixed union on support may be underestimated. Similarly, if people who choose to marry (cohabit) endogamously tend to grow more extensive social networks, then the potential positive effect of endogamous unions on support may be overstated. To correct for such potential selection bias, using the maximum likelihood method, we estimated two simultaneous probit models that allow for a correlation of the error terms from the two models (Maddala, 1983). Such models typically assume that there exists an underlying relationship for the outcome variable ( $y_1$ )

$$y_{1i}^{*} = x_{1i}\beta_1 + u_{1i} \qquad (1)$$

$$y_{1i} = 1 \;\; if \;\; y_{1i}^{*} > 0$$

$$y_{1i} = 0 \;\; otherwise$$

where $y_1^{*}$ is a latent dependent variable (receipt of support); $x_1$ is a vector of covariates; $\beta_1$ is a vector of regression coefficients associated with $x_1$; and $u_1$ is an error term. There is a similar setup for the selection (into intermarriage) equation

$$y_{2i}^{*} = x_{2i}\beta_2 + u_{2i} \qquad (2)$$

$$y_{2i} = 1 \;\; if \;\; y_{2i}^{*} > 0$$

$$y_{2i} = 0 \;\; otherwise\,.$$

From (1) and (2), the error terms $u_1$ and $u_2$ are assumed to be jointly normally distributed with a mean of zero, variance of one, and a correlation of $\rho$. When $\rho = 0$, the single outcome

equation is unbiased. When $\rho \neq 0$, regression estimates on the treatment (mixed union) are likely biased (Greene 2012). When $\rho > 0$, the estimated effect of mixed union from standard single-equation model is generally biased away from zero. The converse is true when $\rho < 0$.

In (1), $x_1$ include the independent variables shown in Table 1. In (2), $x_2$ comprise a somewhat different set of covariates, including gender, minority status, age, immigrant status, 2nd+ union, children, education, and a set of regional (provincial) dummies. Although it is not necessarily required, choosing a slightly different set of covariates for the selection equation helps identify the effect of the "treatment" variable (mixed union) in the outcome equation (Amemiya, 1985). All regression models were estimated using the STATA 12 biprobit procedure.

**Results**

Table 2 presents 5 probit models of receiving domestic assistance for married or cohabiting Canadians aged 45 and over. To conserve space, only the regression estimates from the outcome equation are presented (the results of the selection are available from the authors). Model 1 is a bivariate model, examining the observed difference in the probability of receiving domestic support between in-married (cohabiting) and out-married (cohabiting) persons. Model 2 adds the control variables shown in Table 2, examining the idea that the observed difference (if there is any) can be accounted for by the differences in the control variables between the two marital groups. Model 3 adds an interaction term involving intermarriage and gender, testing the notion that the effect of intermarriage varies by gender. For example, do women fare as well as men in such relationships? Similarly, model 4 adds an interaction term between intermarriage and racial minority status to model 2. Here we are primarily interested in the difference between

the two types of endogamous unions: Do in-married racial minorities fare as well as their non-racial minority counterparts? Finally, model 5 adds a three-way interaction term among intermarriage, gender and racial minority status. Our main concern is to examine whether the effect of intermarriage depends on whether the husband is a racial minority or the wife is a racial minority.

<Table 2 about here>

We first look at the correlation parameter, $\rho$ (rho). The estimate of rho is highly significant in model 1, but nonsignificant in the other model specifications. As a precautionary measure, we also estimated the comparable standard single-equation probit models. We found no substantive difference between the two sets of the regression estimates (the results are available from the authors). We decided to report the estimates from the simultaneous models, partly to be consistent with the other regression tables.

Table 2 shows that intermarriage has a negative effect on the receipt of domestic assistance (see model 1). Persons in mixed unions are less likely to receive domestic assistance than those in endogamous unions. However, the estimate becomes nonsignificant when the control variables are included in the model (see model 2). In model 3, the interaction term between intermarriage and gender is significant, suggesting that the effect of intermarriage varies by gender. Model 4 shows that the effect of intermarriage also differs depending on racial minority status. The three-way interaction term in model 5 is nonsignificant, indicating that the effect of intermarriage does not vary jointly with gender *and* minority status. To facilitate the interpretation of their effects, we plotted the two (2-way) interaction effects in Figure 1.

<Figure 1 about here>

In Figure 1, we observe that gender modifies the effect of intermarriage (see the top graph). Men in mixed unions are the most likely to receive domestic assistance, whereas men in endogamous unions are the least likely to get such assistance. Women are in between: like men, women in mixed unions are more likely to receive such support than women in endogamous unions.

Figure 1 also confirms that racial minority status modifies the effects of intermarriage (see the lower graph). As noted, our primary interest here is in comparing minority- and white-endogamous unions. The difference between the two groups is unmistakable. In-married whites fare better than their minority counterparts.

The effects of the control variables are generally consistent across the models. Middle-aged adults are more likely to receive domestic help than older adults (aged 65 and over). Immigrants are disadvantaged compared to the Canadian-born. The likelihood of receiving domestic support also increases with the length of the union, the number of children, the presence of chronic illness, and homeownership. It declines with education and years of living in the current residence.

Table 3 presents the regression estimates for receipt of assistance in caring for family members. The models have the same specifications as those in Table 2. First, we see that the estimate of rho is significant in model 1 but nonsignificant in models 2-5. None of the interaction terms is statistically significant (see models 3-5), suggesting that model 2 is our preferred model. Like Table 2, we re-estimated model 2 without the selection equation, and noted no difference in the two sets of regression estimates (the results are available from the authors). We chose to report the estimates from the simultaneous models.

<Table 3 about here>

Table 3 shows that individuals in mixed unions are less likely to receive help in caring for family members than those in endogamous unions (see model 1). The effect of intermarriage becomes nonsignificant when the control variables are taken into account (see model 2). Moreover, there is no evidence that the effect of intermarriage varies with gender, racial minority status, or both (see models 3-5). However, the main effects of gender and minority status are significant: women are more likely to receive care for family members than men; and members of racial minorities are generally less likely to get such support than whites. The likelihood of receiving support with caring for family members also appears to decline with age, particularly among the oldest old (age 80 and over). The likelihood is lower among immigrants and better educated persons. However, the likelihood of receiving support with caring activities increases with the length of union, the number of children, and general health.

Turning to transportation assistance, Table 4 presents the regression estimates from the 5 simultaneous probit models. There is evidence of selection bias in models 1-3. Like Table 3, none of the three interaction terms of interest is statistically significant at the conventional level, indicating that model 2 is our preferred model.

<Table 4 about here>

The effect of intermarriage mimics the results reported in Table 3: persons in mixed unions appears to have a lower probability of getting transportation assistance than those in endogamous unions, but the sign of the estimate is reversed when individual differences in other factors are taken into account (see models 1 and 2). The effect of intermarriage does not change with the inclusion of gender, racial minority status, or both in the equations (see models 3-5). Similar to the results reported in Table 3, members of racial minorities are less likely to receive transportation assistance than others. Moreover, the effects of age, immigrant status, number of

children, and education are similar to those seen in Tables 2-3, with seniors, immigrants, parents with fewer (or no) children, and the less educated less likely to receive help with transportation. There is also evidence that persons in paid employment are less likely to receive transportation support.

Table 5 presents the regression estimates from the probit models with sample selection for emotional support. The models reported in the table retain the same specifications as those in the previous regression tables. There is clear evidence of sample selection bias, with the estimate of rho being statistically significant in all 5 models. However, consistent with Table 4, the effect of intermarriage is significant and does not change depending upon gender, racial minority status, or both. As a result, once again, model 2 is our preferred model.

<Table 5 about here>

Unlike instrumental support, the effect of intermarriage on emotional support is positive with or without the control variables added to the model. Persons in mixed unions are more likely to report receiving emotional support regardless of gender, racial minority status, or other selected characteristics. Age effects are similar to those observed for instrumental support, with middle-aged adults more likely to receive emotional support than older persons (age 60 and over). The positive impact of number of children is also consistent with the findings obtained for instrumental support. Health effects are more evident in relation to emotional support: poor health cuts emotional support. Moreover, both education and income boost emotional support, whereas home ownership and length of residence reduce emotional support.

**Discussion**

The present study offers a unique focus on the impact of intermarriage on social support among middle-aged and older adults. As the first study that we know of to address this issue, the results do not appear to provide clear support for inferences derived from several of the major perspectives evident within existing literature on intermarriage. For example, contrary to the implications of arguments that intermarried individuals are more likely than those in endogamous unions to benefit from cultural norms that encourage the provision of support, our findings revealed that intermarriage was associated with a reduced likelihood of receiving various forms of instrumental support and assistance from others living outside the household. Importantly, these relationships generally disappeared or reversed once other relevant factors (such as immigrant status, racial minority status, education levels, and number of children) were included in the equation, suggesting that the negative impact of intermarriage on the receipt of various forms of instrumental support likely reflected one or more these factors. Nevertheless, there was little indication that these factors served to suppress an otherwise positive impact of intermarriage on instrumental support.

Our findings also appear to provide limited support for inferences drawn from the opposing perspective that intermarried individuals are more likely to receive limited support from others due to the latter's disapproval of racial and ethnic intermarriage. Instead, as noted above, our findings revealed that despite being associated with reduced instrumental support and assistance from others living outside the household, intermarriage was associated with enhanced emotional support. Moreover, the positive impact of intermarriage on perceived emotional support was strengthened once various controls were added to the equation, indicating that such factors served to suppress an even stronger relationship. This suggests an advantage on the part of those in mixed unions. However, as discussed by those who emphasize the difficulties often

faced by those who intermarry, it could also be argued that the higher levels of emotional support reported by those in mixed unions reflected their greater perceived need for such support to deal with the negative responses they frequently encounter to intermarriage. Additional research is needed to address this issue.

What about the view that intermarriage is indicative of the successful integration of diverse racial and ethnic minority groups within society (Kalmijn, 2010) and the consequent inference that this will be reflected in levels of support received from individuals (family members, friends, and others) outside the marital relationship that are at least comparable to those available to individuals in homogamous unions? On the one hand, findings suggesting a neutral or positive impact of intermarriage on the receipt of social support once other relevant factors are controlled for would appear to support this view. However, findings indicating that the negative impact of intermarriage on instrumental support generally disappeared once racial minority status and immigrant status (as well as number of children and education levels) were controlled for suggests that the reduced levels of instrumental support evident within mixed unions may be attributable to such factors. In other words, the reason(s) that intermarried individuals receive less instrumental support compared to those in homogamous unions may well include the fact that they are more likely to be members of a racial minority or immigrants. Such findings would seem to provide little foundation for inferences of successful integration.

Findings indicating that gender had a significant main effect on the receipt of assistance with the provision of care to other family members (with women being more likely to receive support) are not surprising and parallel findings frequently reported within previous literature (Chappell & Funk, 2011; Silverstein, Gans, & Yang, 2006). It has been suggested that women are more likely to invest (time, emotion) in activities (e.g., child rearing) that generate these

forms of social capital over the life course (Silverstein et al., 2006). However, the finding that female gender had a negative impact on emotional support from individuals outside the household needs to be considered in the context of previous research indicating that although women are less likely than men to name their spouse as a confidant or source of emotional support (Fuhrer, Stansfeld, Chemali, & Shipley, 1999; Fuhrer & Stansfeld, 2002), they are more likely to maintain close relationships with kin and to have more extensive friendship networks involving close supportive relationships (Arber, 2005). Perhaps our findings reflect the way that the survey's questions regarding emotional support were worded and/or characteristics of the specific cohorts studied here (i.e., currently married or cohabiting, aged 45 and over). Alternatively, our findings may suggest that gender-related patterns of support among married/cohabiting couples are more complex and differentiated than frequently assumed. For example, is it the case that women are more likely to report having a confidant and/or having more confidants but also, to report less overall emotional support?

In addition, the finding that gender interacted with intermarriage such that men in mixed unions were the most likely to receive support from those outside the household with household tasks (followed by women in mixed unions, women in endogamous unions and finally, men in endogamous unions) is only partially supportive of prior research. For example, while men receive more household and other types of practical support than women (Turcotte and Schellenberg, 2007), this tends to reflect the fact that men receive more care when the spouse is included but that the pattern reverses when non-spousal sources of support are considered (e.g., Fuhrer & Stansfeld, 2002; Noël-Miller, 2011). Our findings indicate that this is limited to men in endogamous unions. Why this should vary in conjunction with intermarriage is less clear. Perhaps, as suggested above, in view of the difficulties often faced by those who intermarry, the

higher levels of household support reported by men in mixed unions reflected others' perceptions of their greater perceived need for such support to deal with the negative responses they frequently encounter to intermarriage. Once again, additional research is recommended to address this issue.

The finding that racial minority status had a significant negative effect on all three dimensions of instrumental support as well as on emotional support would appear to contradict generalized assumptions to the effect that racial minority status necessarily coincides with cultural norms considered to be conducive to the provision of support to older family members (see Silverstein, Gans, & Yang, 2006). Conversely, it points to the potential vulnerability of racial minorities if and when they are faced with health declines accompanied by a lack (or loss) of support from others within the household. In the present study, racial minority status also interacted with intermarriage such that racial minority partners embedded within mixed unions were less likely to report instrumental support with household tasks than their non-minority counterparts. Given the particular importance of such support for the ability to maintain independent living in later life, they appear to represent a particularly vulnerable sector of the population. However, while these findings indicate that racial minority status confers disadvantage with respect to such support, particularly for those in mixed unions, the finding that gender, racial minority status, and intermarriage did not interact to influence instrumental or emotional support provides little indication that the negative implications of interracial intermarriage are simultaneously strongly gendered as well as racially specific (e.g., Bratter & King, 2008), at least within the context studied here.

Our findings are also instructive with regard to the implications of cohabitation. In the present study, cohabitation had little impact on instrumental support (including household

support, help with caring, or transportation) or emotional support from those outside the household. This differs from previous literature which, although nascent, tends to suggest that relative to marriage, old age cohabitation is likely to have negative implications for the receipt of social support and informal care from outside the couple relationship, including both kin and non-kin support (Brown et al., 2006; Eggebeen, 2005; Hogerbrugge & Dykstra, 2009; Noël-Miller, 2011). Instead, our findings appear to suggest that cohabitation may have become a more accepted family form in Canada and indistinguishable from marriage when it comes to the receipt of social support, a finding similar to that reported for other domains including physical and mental health outcomes, social networks and social engagement (e.g., Schimmele & Wu, 2011; Wu & Hart, 2002).

In summary, our findings indicate that mixed unions are not uniformly positive, neutral, or negative in terms of their implications for social support. Instead, both advantages and disadvantages appear to be linked to intermarriage. There is a need for further research to be conducted to confirm these findings – in different contexts and using different measures of instrumental and emotional support. There is also a need for research to address the impact of specific types of intermarriages to assess whether the patterns observed here reflect the most prevalent forms of intermarriage or are more broadly applicable. Similarly, future research should explore whether there are differences evident across middle-aged and older cohorts. Finally, it would also appear important to include a focus on who is providing various types of support – both inside and outside of the household. Overall, our findings suggest the need for future theoretical and empirical work on intermarriage to address the complexities of these relationships in order to enhance our understanding of these emergent family structures.

**References**


Alba, R., & Nee, V. (2003). *Remaking the American Mainstream: Assimilation and Contemporary Immigration.* Harvard University Press, Cambridge, MA.

Amemiya, T. (1985). *Advanced Econometrics*. Cambridge, MA: Harvard University Press.

Arber, S. (2005). Inequalities in later life: Gender, marital status, and health behaviours. Pp. 129-164 in S. Svallfors (Ed.), Analyzing Inequality. Stanford, CA: Stanford University Press.

Askham, J., Ferring, D., & Lamura, G. (2007). Personal relationships in later life. In Bond, J., Peace, S., Dittmann-Kohli, F. & Westerhof, G. J. (eds), *Ageing in Society*. London, Sage. 186–208.

Barrett, A.E., & Lynch, S.M. (1999). Caregiving networks of elderly persons: Variation by marital status. *The Gerontologist*, 39(5), 695-704.

Bramlett, M. D., & Mosher, W. D. (2002). Cohabitation, marriage, divorce, and remarriage in the United States. Vital and Health Statistics (Series 23, No. 22). Hyattsville, MD: National Center for Health Statistics.

Bratter, J.L., & Eschbach, K. (2005). What about the couple? Interracial marriage and psychological distress. *Social Science Research,* 35, 1025–1047.

Bratter, J.L. & King, R.B. (2008). ''But will it last?'': Marital instability among interracial and same-race couples. *Family Relations*, 57, 160–171.

Brown, S. L., Bulanda, J. R., & Lee, G. R. (2005). The significance of nonmarital cohabitation: Marital status and mental health benefits among middle-aged and older adults. *The Journals of Gerontology, Series B Psychological Sciences and Social Sciences*, *60*, 21–29.

Chappell, N.L., & Funk, L.M. (2011). Social support, caregiving, and aging. *Canadian Journal on Aging*, 30(3), 355-370.

Chappell, N.L., McDonald, L., & Stones, M. (2010). *Aging in Contemporary Canada,* 2nd ed. Toronto: Pearson Canada Inc.

Childs, E.C. (2005). *Navigating Interracial Borders: Black-White Couples and their Social Worlds.* New Brunswick, NJ: Rutgers University Press.

Curran, S., McLanahan, S. & Knab, J. (2003). Does remarriage expand perceptions of kinship support among the elderly? *Social Science Research*, 32(2), 171–190.

Eggebeen, D. J. (2005). Cohabitation and exchanges of support. *Social Forces, 83*, 1097–1110.

Fields, J., & Casper, L. (2001). America`s families and living arrangements: March 2000. Current Population Reports, P20-537. Washington, DC: U.S. Census Bureau.

Fincham, F.D. & Beach, S.R.H. (2010). Marriage in the New Millennium: A Decade in Review. *Journal of Marriage and Family*, 72, 630 – 649.

Fryer, R.G. (2007). Guess who's been coming to dinner? Trends in interracial marriage over the 20th century. *Journal of Economic Perspectives,* 21(2), 71-90.

Fu, V. K. (2001). Racial intermarriage pairings. *Demography, 38*, 147 – 159.

Fu, V.K. (2010). Remarriage, delayed marriage, and Black/White intermarriage, 1968–1995. *Popul Res Policy Rev*, 29, 687–713.

Fu, V.K. & Wolfinger, N.H. (2011). Broken boundaries or broken marriages? Racial intermarriage and divorce in the United States. *Social Science Quarterly*, 92(4), 1096-1117.

Fu, X., Tora, J., & Kendall, H. (2001). Marital happiness and inter-racial marriage: a study in a multi-ethnic community in Hawaii, *Journal of Comparative Family Studies*, 32, 47-60.

Fuhrer, R., Stansfeld, S.A., Chemali, J., & Shipley, M.J. (1999). Gender, social relations and mental health: prospective findings from an occupational cohort (Whitehall II study). *Social Science & Medicine*, 48, 77-87.

Fuhrer, R., & Stansfeld, S.A. (2002). How gender affects patterns of social relations and their impact on health: a comparison of one or multiple sources of support from ''close persons''. *Social Science & Medicine*, 54, 811–825.

Giorgas, D., & Jones, F.L. (2002). Intermarriage patterns and social cohesion among first, second and later generation Australians. *Journal of Population Research*, 19(1), 47-64.

Glaser, K., Stuchbury, R., Tomassini, C., & Askham, J. (2008a). The long-term consequences of partnership dissolution for support in later life in the United Kingdom. *Ageing & Society*, 28, 329–351.

Glaser, K., Tomassini, C., & Stuchbury, R. (2008b). Differences over time in the relationship between partnership disruptions and support in early old age in Britain. *Journal of Gerontology: Social Sciences*, 63B(6), S359–S368.

Gonzalez-Ferrer, A. (2006). Who do immigrants marry? Partner choice among single immigrants in Germany. *European Sociological Review,* 22(2), 171–185.

Gray, A. (2009). The social capital of older people. *Ageing & Society*, 29, 5–31.

Greene, W.H. (2012). *Econometric analysis,* 7th ed. Upper Saddle River, NJ: Prentice Hall.

Gullickson, A. (2006). Education and Black-White interracial marriage. *Demography, 43*, 673 – 689.

Ha, J. (2008). Changes in support from confidants, children, and friends following widowhood. *Journal of Marriage and Family*, *70*, 306 – 318.

Hamplová, D., & Le Bourdais, C (2010). racial minorities and 'White'–'non-White' conjugal unions in Canadian large cities, *Ethnic and Racial Studies*, 33, 1537-1560.

Harris, D.R., & H. Ono. (2005). How many interracial marriages would there be if all groups were of equal size in all places? A new look at national estimates of interracial marriage." *Social Science Research,* 34, 236–251.

Hogerbrugge, M. J. A., & Dykstra, P. A. (2009). The family ties of unmarried cohabiting and married persons in the Netherlands. *Journal of Marriage and Family, 71*, 135–145.

Jacobs, J.A., & Labov, T.G. (2002). Gender differences in intermarriage among sixteen race and ethnic groups. *Sociological Forum,* 17(4), 621–646.

Joyner, K., & Kao, G. (2005). Interracial relationships and the transition to adulthood. *American Sociological Review,* 70, 563-581.

Kalbach, M.A. (2002). Ethnic intermarriage in Canada. *Canadian Ethnic Studies*, 34, 25–39.

Kalmijn, M. (1998). Intermarriage and homogamy: Causes, patterns, trends. *Annual Review of Sociology,* 24, 395-421.

Kalmijn, M. (2007). Gender differences in the effects of divorce, widowhood and remarriage on intergenerational support: Does marriage protect fathers*? Social Forces,* 85(3), 1079-1104.

Kalmijn, M. (2010). Consequences of Racial Intermarriage for Children's Social Integration. *Sociological Perspectives*, 53(2), 271-286.

Kalmijn, M., de Graaf, P.M., & Janssen, J.P.G. (2005). Intermarriage and the risk of divorce in the Netherlands: The effects of differences in religion and in nationality, 1974-94. *Population Studies*, 59(1), 71-85.

Kalmijn, M., & Van Tubergen, F. (2006). Ethnic intermarriage in the Netherlands: Confirmations and refutations of accepted insights." *European Journal of Population,* 22(4), 371–397.

Kalmijn, M., & van Tubergen, F. (2010). A comparative analysis of intermarriage: Explaining differences among national-origin groups in the United States. *Demography, 47*, 459 – 479.

Keating, N., Fast, J., Frederick, J., Cranswick, K. & Perrier, C. (1999). *Eldercare in Canada: Context, content and consequences*. Ottawa: Minister of Industry. Catalogue No, 89-570-XPE.

Kennedy, S. & Bumpass, L. L. (2008). Cohabitation and children's living arrangements: New estimates from the United States." *Demographic Research 19*, 1663-1692.

Kerr, D., Moyser, M. & Beaujot, R. (2006). "Marriage and cohabitation: Demographic and socioeconomic differences in Quebec and Canada." *Canadian Studies in Population 33*, 83-117.

Killian, K. D. (2003). Homogamy outlaws: Interracial couples' strategic responses to racism and to partner differences. In V. Thomas, T. Karis, & J. Wetchler (Eds.), *Clinical issues with interracial couples: Theories and research* (pp. 3–23). Binghamton, NY: The Haworth Press.

Krause, N. (2004). Lifetime trauma, emotional support, and life satisfaction among older adults. *The Gerontologist* , 44(5), 615–623.

Lee, J., & Bean, F.D. (2004). America's changing color lines: Immigration, race/ethnicity, and multiracial identification. *Annual Review of Sociology,* 30(1), 221–242.

Lee, S. M., & Edmonston, B. (2005). New marriages, new families: U.S. Racial and Hispanic intermarriage. *Population Bulletin*, 60, 1–40.

Lee, S.M., & Boyd, M. (2008). Marrying out: Comparing the marital and social integration of Asians in the US and Canada. *Social Science Research*, 37, 311–329.

Lewis, R., & Yancey, G. (1995). Bi-racial marriages in the United States: An analysis of variation in family member support of the decision to marry. *Sociological Spectrum,* 15(4), 443–462.

Lima, J. C., Allen, S. M., Goldscheider, F., & Intrator, O. (2008). Spousal caregiving in late midlife versus older ages: Implications of work and family obligations. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *63*, 229–238.

Maddala, G. S. (1983). *Limited-dependent and qualitative variables in economics*. New York: Cambridge University Press.

Milan, A., & Hamm, B. (2004). Mixed Unions. *Canadian Social Trends*. Ottawa: Statistics Canada. Catalogue No. 11-008.

Monden, C.W.S., & Smits, J. (2005). Ethnic intermarriage in times of social change: The case of Latvia. *Demography,* 42(2), 323–345.

Mossey, J. M. & Shapiro, E. (1982). Self-rated health: A predictor of mortality among the elderly. *American Journal of Public Health 72*, 800-808.

Muttarak, R., & Heath, A. (2010). Who intermarries in Britain? Explaining ethnic diversity in intermarriage patterns. *The British Journal of Sociology,* 61(2), 275-305.

Myles, J., & Hou, F. (2004). Changing colours: Neighbourhood attainment and residential segregation among Toronto's racial minorities. *Canadian Journal of Sociology,* 29(1), 29-58.

Noël-Miller, C.M. (2011). Partner caregiving in older cohabiting couples. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 66(3),* 341–353, doi:10.1093/geronb/gbr027

Okun, B.S. (2001). The Effects of ethnicity and educational attainment on Jewish marriage patterns: Changes in Israel, 1957–1995. *Population Studies,* 55(1), 49–64.

Pezzin, L. E., Pollak, R. A., & Schone, B. S. (2008). Parental marital disruption, family type, and transfers to disabled elderly parents. *Journal of Gerontology: Social Sciences, 63B*, S349 – S358.

Phillips, J. A., & Sweeney, M.M. (2006). Can differential exposure to risk factors explain recent racial and ethnic variation in marital disruption? *Social Science Research,* 35, 409–434.

Qian, Z. (2004). Options: Racial/ethnic identification of children of intermarried couples." *Social Science Quarterly,* 85(3), 746–766.

Qian, Z., & Lichter, D.T. (2001). Measuring marital assimilation: Intermarriage among natives and immigrants. *Social Science Research,* 30, 289-312.

Qian, Z., & Lichter, D.T. (2007). Social boundaries and marital assimilation: Interpreting trends in racial and ethnic intermarriage. *American Sociological Review,* 72, 68–94.

Qian, Z., & Lichter, D.T. (2011). Changing patterns of interracial marriage in a multiracial society. *Journal of Marriage and Family,* 73(5), 1065-1084.

Romano, R.C. (2003). *Race Mixing: Black-White Marriage in Postwar America*. Cambridge, MA: Harvard University Press.

Root, M. P. (2001). *Love's Revolution*. Philadelphia: Temple University Press.

Roy, P., & Hamilton, I. (2000). Intermarriage among Italians: Some regional variations in Australia. *Journal of Comparative Family Studies,* 31(1), 63–78.

Schimmele, C. M. & Wu, Z. (2011). Cohabitation and social engagement. *Canadian Studies in Population*. *38*, 23-36.

Seltzer, M.M., & Li, L.W. (2000). The dynamics of caregiving: Transitions during a three-year prospective study. *The Gerontologist*, *40,* 165–178.

Silverstein, M., Gans, D., & Yang, F.M. (2006). Intergenerational support to aging parents: The role of norms and needs. *Journal of Family Issues,* 27, 1068-1084.

Silverstein, M., & Giarrusso, R. (2010). Aging and family life: A decade review. *Journal of Marriage and Family*, 72, 1039–1058.

Shaw, B.A., Krause, N., Liang, J., & Bennett, J. (2007). Tracking changes in social relations throughout late life. *Journal of Gerontology: Social Sciences*, 62B(2), S90-S99.

Simon, R.W. (2002). Revisiting the relationships among gender, marital status, and mental health. *American Journal of Sociology*, 107(4), 1065-1096.

Song, M. (2009). Is intermarriage a good indicator of integration? *Journal of Ethnic and Migration Studies*, 35, 331-348.

Spillman, B., & Pezzin, L. (2000). Potential and active family caregivers: Changing networks and the ‘‘sandwich generation.’’ *Milbank Quarterly*, 78(3), 347–374.

Statistics Canada (2008). *Canada's Ethnocultural Mosaic, 2006 Census*. Catalogue no. 97-562-X. Ottawa: Minister of Industry. http://dsp-psd.pwgsc.gc.ca/collections/collection_2010/statcan/CS97-562-2006-1-eng.pdf

Statistics Canada. (2009). *General Social Survey Cycle 21: Family, Social Support and Retirement Public Use Microdata File Documentation and User's Guide*. Catalogue no. 12M0021G. Ottawa: Statistics Canada.

Thornton, A. & Young-DeMarco, L. (2001). Four decades of trends in attitudes toward family issues in the United States: The 1960s through the 1990s. *Journal of Marriage and Family*, 63(4), 1009–1037.

Turcotte, M. & Schellenberg, G. (2007). A Portrait of Seniors in Canada, 2006. Ottawa: Minister of Industry.

Tzeng, J.M. (2000). Ethnically heterogamous marriages: The case of Asian Canadians. *Journal of Comparative Family Studies,* 31(3), 321-337.

U.S. Bureau of the Census (2012). U.S. Census Bureau, Statistical Abstract of the United States: 2011 . http://www.census.gov/compendia/statab/2011/tables/11s0060.pdf

Wachter, K.W. (1997). Kinship resources for the elderly. *Philosophical Transactions of the Royal Society of London: Biological Sciences*, 352, 1363, 1811–1817.

Waite, L. (2009). Marital history and well-being in later life. In P. Uhlenberg (ed.), *International Handbook of Population Aging.* Springer. DOI 10.1007/978-1-4020-8356-3_31, 691-704.

Walker, R.B., & Luszcz, M.A. (2009). The health and relationship dynamics of late-life couples: a systematic review of the literature. *Ageing & Society*, 29, 455–480.

Wallsten, S. S. (2000). Effects of caregiving, gender, and race on the health, mutuality, and social supports of older couples. *Journal of Aging and Health,* 12(1), 90-111.

Wang, H. Y., Kao, G., & Joyner, K. (2006). Stability of interracial and intraracial romantic relationships among adolescents. *Social Science Research,* 35, 435–453.

Wolff, J.L., & Kasper, J.D. (2006). Caregivers of frail elders: Updating a national profile. *The Gerontologist*, 46(3), 344–356

Wu, Z. & Hart, R. (2002). The effects of marital and nonmarital union transition on health. *Journal of Marriage and Family 64*, 420-432.

Xie, Y., & Goyette, K. (1997). The racial identification of biracial children with one Asian parent: Evidence from the 1990 Census. *Social Forces, 76*, 547–570.

Zhang, Y., & van Hook, J. (2009). Marital dissolution among interracial couples. *Journal of Marriage and Family*, *71*, 95–107.

Table 1 Descriptive Statistics of the Variables Used in the Regression Models: Married or Cohabiting Canadians (age 45+), 2007

| | | Out-married | In-married |
|---|---|---|---|
| Variable | Definition | % or M | % or M |
| Domestic assistance[a] | Dummy indicator (1 = yes, 0 = no) | 77.5% | 85.6% |
| Personal care[a] | Dummy indicator (1 = yes, 0 = no) | 85.7% | 88.6% |
| Transportation[a] | Dummy indicator (1 = yes, 0 = no) | 84.5% | 91.2% |
| Emotional support[a] | Dummy indicator (1 = yes, 0 = no) | 46.6% | 42.2% |
| | | | |
| Female | Dummy indicator (1 = women, 0 = men) | 56.4% | 53.0% |
| Minority | Dummy indicator (1 = racial minority, 0 = no) | 45.5% | 4.4% |
| Age at interview | | | |
| 45-49 | Dummy indicator (1 = yes, 0 = no) | 34.4% | 21.9% |
| 50-54 | Dummy indicator (1 = yes, 0 = no) | 17.0% | 19.9% |
| 55-59 | Dummy indicator (1 = yes, 0 = no) | 21.5% | 17.3% |
| 60-64 | Dummy indicator (1 = yes, 0 = no) | 10.9% | 14.1% |
| 65-69 | Dummy indicator (1 = yes, 0 = no) | 8.5% | 9.8% |
| 70-74 | Dummy indicator (1 = yes, 0 = no) | 5.2% | 7.3% |
| 75-79 | Dummy indicator (1 = yes, 0 = no) | 1.4% | 5.4% |
| 80 or over | Reference group | 1.1% | 4.4% |
| Immigrant | Dummy indicator (1 = yes, 0 = no) | 44.3% | 15.6% |
| | | | |
| Cohabitation | Dummy indicator (1 = cohabitation, 0 = marriage) | 12.0% | 10.5% |
| 2nd union | Dummy indicator (1 = second or higher union, 0 = | | |
| | first union) | 42.6% | 27.1% |
| Length of union | Years in current union | 21.07 | 29.81 |
| Children | Number of children ever raised | 2.01 | 2.34 |
| | | | |
| General health | Self-reported health (1 = poor, …, 5 = excellent) | 3.77 | 3.68 |
| Activity limitation | Dummy indicator (1 = yes, 0 = no) | 34.0% | 41.9% |
| Chronic illness | Dummy indicator (1 = yes, 0 = no) | 46.5% | 50.1% |
| | | | |
| Education | Educational attainments (1 = elementary or less, .. | 7.02 | 5.56 |
| | 10 = some post graduate education or higher) | | |
| Employment | | | |
| Employed | Working at a paid job/business | 71.4% | 56.1% |
| Others | Not working outside home | 12.7% | 12.6% |
| Retired | Reference group | 16.0% | 31.3% |
| Income | Household income (1 = no income or loss, … 12 = | | |
| | $100,000 or more) | 9.93 | 9.57 |
| Home ownership | Dummy indicator (1 = yes, 0 = no) | 89.4% | 91.0% |
| Length of residence | Years living in the current residence (1 = less than | | |
| | 6 months, …, 6 = 10 years or more) | 5.10 | 5.29 |
| | | | |
| *N* | | 249 | 11935 |

[a] See text for details.

*Note*: Weighted percentages, unweighted *N*.

*Source*: The 2007 Canadian General Social Survey.

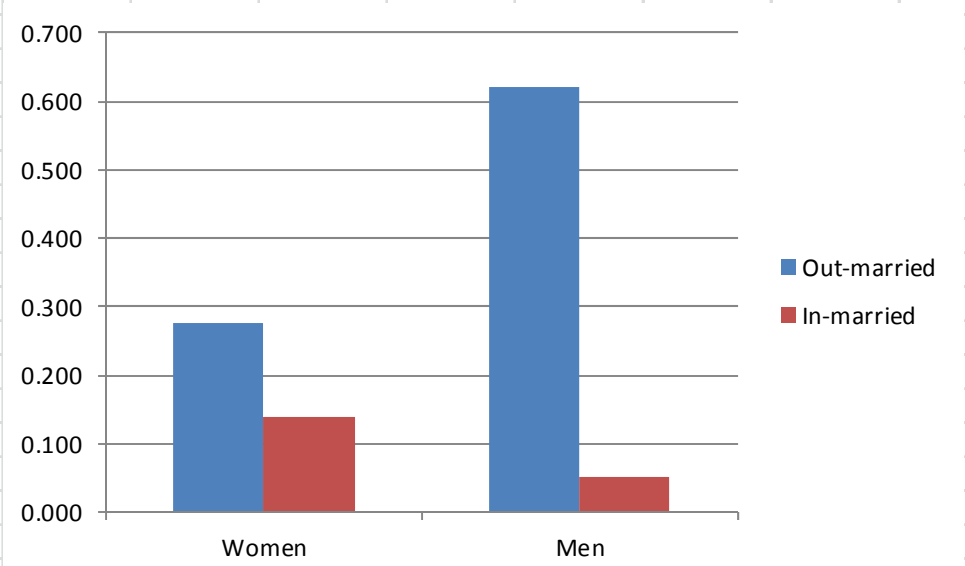
| Table 2 Probit Models of Receiving Domestic Assistance with Correction for Selection into Intermarriage: Married or Cohabiting Canadians (age 45+), 2007 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | |
| Intermarried (1 = yes) | -0.983 | *** | 0.422 | | 0.571 | | -0.920 | | -0.459 | |
| Female (1 = yes) | | | 0.077 | * | 0.089 | ** | 0.083 | ** | 0.099 | ** |
| Minority (1 = yes) | | | -0.385 | ** | -0.373 | ** | -0.261 | * | -0.177 | |
| Age at interview | | | | | | | | | | |
| 45-49 | | | 0.286 | ** | 0.289 | ** | 0.306 | ** | 0.304 | ** |
| 50-54 | | | 0.214 | * | 0.217 | * | 0.221 | * | 0.222 | * |
| 55-59 | | | 0.154 | | 0.159 | | 0.166 | † | 0.169 | † |
| 60-64 | | | 0.184 | † | 0.185 | * | 0.189 | * | 0.190 | * |
| 65-69 | | | 0.031 | | 0.035 | | 0.043 | | 0.044 | |
| 70-74 | | | -0.013 | | -0.010 | | -0.002 | | -0.001 | |
| 75-79 | | | -0.074 | | -0.073 | | -0.068 | | -0.068 | |
| 80 or over[a] | | | | | | | | | | |
| Immigrant (1 = yes) | | | -0.199 | *** | -0.201 | *** | -0.195 | *** | -0.198 | *** |
| Cohabitation (1 = yes) | | | -0.021 | | -0.023 | | -0.027 | | -0.029 | |
| 2nd union (1 = yes) | | | -0.033 | | -0.028 | | -0.007 | | -0.007 | |
| Length of union | | | 0.004 | * | 0.004 | * | 0.004 | * | 0.004 | * |
| Children | | | 0.063 | *** | 0.062 | *** | 0.061 | *** | 0.061 | *** |
| General health | | | 0.006 | | 0.006 | | 0.006 | | 0.006 | |
| Activity limitation (1 = yes) | | | 0.025 | | 0.025 | | 0.025 | | 0.025 | |
| Chronic illness (1 = yes) | | | 0.062 | † | 0.063 | † | 0.060 | † | 0.062 | † |
| Education | | | -0.016 | ** | -0.015 | ** | -0.013 | * | -0.013 | * |
| Employment | | | | | | | | | | |
| Employed | | | -0.060 | | -0.058 | | -0.059 | | -0.057 | |
| Others | | | 0.039 | | 0.039 | | 0.040 | | 0.042 | |
| Retired[a] | | | | | | | | | | |
| Household income | | | 0.005 | | 0.005 | | 0.004 | | 0.005 | |
| Home ownership (1 = yes) | | | 0.138 | * | 0.137 | * | 0.135 | * | 0.135 | * |
| Length of residence | | | -0.040 | ** | -0.040 | ** | -0.040 | ** | -0.041 | ** |
| | | | | | | | | | | |
| Intermarried x female | | | | | -0.432 | * | | | -0.468 | † |
| Intermarried x minority | | | | | | | 0.712 | * | 0.376 | |
| Female x minority | | | | | | | | | -0.163 | |
| Intermarried x female x minority | | | | | | | | | 0.357 | |
| | | | | | | | | | | |
| Intercept | 1.126 | *** | 0.802 | *** | 0.792 | *** | 0.794 | *** | 0.782 | |
| Log likelihood | -5631.2 | | -5559.8 | | -5557.2 | | -5557.2 | | -5554.6 | |
| *rho* | 0.357 | *** | -0.234 | | -0.184 | | 0.257 | | 0.198 | |
| *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < .10$ (two-tailed test) | | | | | | | | | | |
| [a] Reference group. | | | | | | | | | | |
| *Source*: The 2007 Canadian General Social Survey. | | | | | | | | | | |

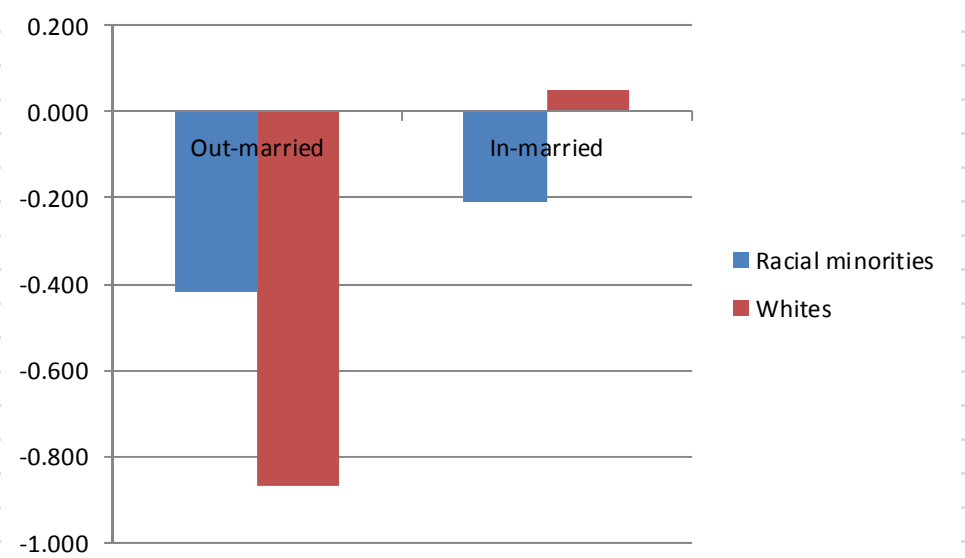
| Table 3 Probit Models of Receiving Care for Family Members with Correction for Selection into Intermarriage: Married or Cohabiting Canadians (age 45+), 2007 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | |
| Intermarried (1 = yes) | -0.684 | ** | 0.678 | | 0.557 | | 0.796 | | 0.320 | |
| Female (1 = yes) | | | 0.110 | ** | 0.104 | ** | 0.109 | ** | 0.100 | ** |
| Minority (1 = yes) | | | -0.355 | * | -0.352 | * | -0.373 | * | -0.399 | * |
| Age at interview | | | | | | | | | | |
| 45-49 | | | 0.579 | *** | 0.577 | *** | 0.574 | *** | 0.585 | *** |
| 50-54 | | | 0.409 | *** | 0.406 | *** | 0.407 | *** | 0.410 | *** |
| 55-59 | | | 0.382 | *** | 0.379 | *** | 0.380 | *** | 0.383 | *** |
| 60-64 | | | 0.330 | *** | 0.328 | *** | 0.328 | *** | 0.329 | *** |
| 65-69 | | | 0.335 | *** | 0.332 | *** | 0.333 | *** | 0.336 | *** |
| 70-74 | | | 0.188 | * | 0.186 | * | 0.186 | * | 0.189 | * |
| 75-79 | | | 0.205 | * | 0.204 | * | 0.204 | * | 0.206 | * |
| 80 or over[a] | | | | | | | | | | |
| Immigrant (1 = yes) | | | -0.222 | *** | -0.222 | *** | -0.222 | *** | -0.222 | *** |
| Cohabitation (1 = yes) | | | 0.007 | | 0.009 | | 0.008 | | 0.009 | |
| 2nd union (1 = yes) | | | -0.084 | | -0.086 | | -0.089 | | -0.080 | |
| Length of union | | | 0.003 | | 0.003 | | 0.003 | | 0.003 | |
| Children | | | 0.075 | *** | 0.075 | *** | 0.075 | *** | 0.074 | *** |
| General health | | | 0.079 | *** | 0.079 | *** | 0.079 | *** | 0.079 | *** |
| Activity limitation (1 = yes) | | | -0.034 | | -0.034 | | -0.034 | | -0.033 | |
| Chronic illness (1 = yes) | | | -0.001 | | -0.001 | | -0.001 | | -0.002 | |
| Education | | | -0.019 | ** | -0.019 | ** | -0.019 | ** | -0.018 | ** |
| Employment | | | | | | | | | | |
| Employed | | | 0.000 | | -0.001 | | 0.000 | | -0.001 | |
| Others | | | 0.040 | | 0.040 | | 0.040 | | 0.039 | |
| Retired[a] | | | | | | | | | | |
| Household income | | | 0.012 | | 0.012 | | 0.012 | | 0.011 | |
| Home ownership (1 = yes) | | | 0.030 | | 0.030 | | 0.029 | | 0.030 | |
| Length of residence | | | -0.026 | † | -0.025 | † | -0.025 | † | -0.026 | † |
| | | | | | | | | | | |
| Intermarried x female | | | | | 0.262 | | | | 0.345 | |
| Intermarried x minority | | | | | | | -0.060 | | 0.220 | |
| Female x minority | | | | | | | | | 0.137 | |
| Intermarried x female x minority | | | | | | | | | -0.278 | |
| | | | | | | | | | | |
| Intercept | 1.245 | ** | 0.432 | * | 0.438 | * | 0.435 | * | 0.438 | * |
| Log likelihood | -4780.8 | | -4681.3 | | -4680.5 | | -4681.3 | | -4680.1 | |
| *rho* | 0.260 | * | -0.327 | | -0.333 | | -0.376 | | -0.251 | |
| *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < .10$ (two-tailed test) | | | | | | | | | | |
| [a] Reference group. | | | | | | | | | | |
| *Source*: The 2007 Canadian General Social Survey. | | | | | | | | | | |

| Table 4 Probit Models of Receiving Transportation Assistance with Correction for Selection into Intermarriage: Married or Cohabiting Canadians (age 45+), 2007 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | |
| Intermarried (1 = yes) | -0.900 | *** | 0.934 | * | 0.987 | * | 0.077 | | 0.016 | |
| Female (1 = yes) | | | 0.037 | | 0.041 | | 0.045 | | 0.045 | |
| Minority (1 = yes) | | | -0.604 | *** | -0.603 | *** | -0.487 | *** | -0.514 | *** |
| Age at interview | | | | | | | | | | |
| 45-49 | | | 0.318 | * | 0.319 | * | 0.352 | ** | 0.354 | ** |
| 50-54 | | | 0.235 | * | 0.236 | * | 0.250 | * | 0.251 | * |
| 55-59 | | | 0.243 | * | 0.245 | * | 0.267 | * | 0.268 | * |
| 60-64 | | | 0.197 | † | 0.198 | † | 0.210 | † | 0.210 | † |
| 65-69 | | | 0.095 | | 0.097 | | 0.114 | | 0.115 | |
| 70-74 | | | 0.025 | | 0.026 | | 0.041 | | 0.041 | |
| 75-79 | | | -0.067 | | -0.067 | | -0.059 | | -0.060 | |
| 80 or over[a] | | | | | | | | | | |
| Immigrant (1 = yes) | | | -0.215 | *** | -0.216 | *** | -0.218 | *** | -0.219 | *** |
| Cohabitation (1 = yes) | | | -0.065 | | -0.065 | | -0.074 | | -0.074 | |
| 2nd union (1 = yes) | | | -0.094 | | -0.093 | | -0.063 | | -0.062 | |
| Length of union | | | 0.002 | | 0.002 | | 0.002 | | 0.002 | |
| Children | | | 0.056 | *** | 0.056 | *** | 0.054 | *** | 0.054 | *** |
| General health | | | 0.003 | | 0.003 | | 0.002 | | 0.002 | |
| Activity limitation (1 = yes) | | | -0.001 | | -0.001 | | -0.002 | | -0.002 | |
| Chronic illness (1 = yes) | | | 0.037 | | 0.037 | | 0.036 | | 0.036 | |
| Education | | | -0.015 | * | -0.015 | * | -0.011 | † | -0.011 | † |
| Employment | | | | | | | | | | |
| Employed | | | -0.147 | ** | -0.147 | ** | -0.151 | ** | -0.151 | ** |
| Others | | | -0.046 | | -0.046 | | -0.048 | | -0.048 | |
| Retired[a] | | | | | | | | | | |
| Household income | | | 0.001 | | 0.001 | | 0.000 | | 0.000 | |
| Home ownership (1 = yes) | | | -0.021 | | -0.021 | | -0.024 | | -0.025 | |
| Length of residence | | | 0.005 | | 0.005 | | 0.003 | | 0.004 | |
| | | | | | | | | | | |
| Intermarried x female | | | | | -0.114 | | | | 0.037 | |
| Intermarried x minority | | | | | | | 0.491 | | 0.657 | |
| Female x minority | | | | | | | | | 0.057 | |
| Intermarried x female x minority | | | | | | | | | -0.303 | |
| | | | | | | | | | | |
| Intercept | 1.401 | *** | 1.172 | *** | 1.168 | *** | 1.165 | *** | 1.163 | *** |
| Log likelihood | -4397.8 | | -4335.9 | | -4335.7 | | -4334.5 | | -4334.2 | |
| *rho* | 0.264 | ** | -0.528 | * | -0.521 | * | -0.182 | | -0.166 | |
| *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < .10$ (two-tailed test) | | | | | | | | | | |
| [a] Reference group. | | | | | | | | | | |
| *Source*: The 2007 Canadian General Social Survey. | | | | | | | | | | |

| Table 5 Probit Models of Receiving Emotional Support with Correction for Selection into Intermarriage: Married or Cohabiting Canadians (age 45+), 2007 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | |
| Intermarried (1 = yes) | 0.709 | * | 1.295 | *** | 1.303 | *** | 1.427 | *** | 1.648 | *** |
| Female (1 = yes) | | | -0.650 | *** | -0.649 | *** | -0.649 | *** | -0.660 | *** |
| Minority (1 = yes) | | | -0.483 | *** | -0.481 | *** | -0.481 | *** | -0.702 | *** |
| Age at interview | | | | | | | | | | |
| 45-49 | | | 0.401 | *** | 0.401 | *** | 0.398 | *** | 0.395 | *** |
| 50-54 | | | 0.298 | *** | 0.298 | *** | 0.297 | *** | 0.296 | *** |
| 55-59 | | | 0.237 | ** | 0.237 | ** | 0.236 | ** | 0.234 | ** |
| 60-64 | | | 0.124 | | 0.124 | | 0.124 | | 0.121 | |
| 65-69 | | | -0.090 | | -0.089 | | -0.090 | | -0.092 | |
| 70-74 | | | -0.101 | | -0.101 | | -0.101 | | -0.102 | |
| 75-79 | | | -0.062 | | -0.062 | | -0.062 | | -0.062 | |
| 80 or over[a] | | | | | | | | | | |
| Immigrant (1 = yes) | | | 0.009 | | 0.009 | | 0.008 | | 0.009 | |
| Cohabitation (1 = yes) | | | -0.073 | † | -0.073 | † | -0.071 | † | -0.071 | † |
| 2nd union (1 = yes) | | | 0.051 | | 0.052 | | 0.049 | | 0.045 | |
| Length of union | | | 0.000 | | 0.000 | | 0.000 | | 0.000 | |
| Children | | | 0.034 | *** | 0.034 | *** | 0.034 | *** | 0.034 | *** |
| General health | | | -0.027 | * | -0.027 | * | -0.027 | * | -0.027 | * |
| Activity limitation (1 = yes) | | | 0.245 | *** | 0.245 | *** | 0.244 | *** | 0.245 | *** |
| Chronic illness (1 = yes) | | | 0.158 | *** | 0.158 | *** | 0.158 | *** | 0.157 | *** |
| Education | | | 0.031 | *** | 0.031 | *** | 0.031 | *** | 0.031 | *** |
| Employment | | | | | | | | | | |
| Employed | | | 0.043 | | 0.043 | | 0.043 | | 0.042 | |
| Others | | | 0.009 | | 0.009 | | 0.010 | | 0.008 | |
| Retired[a] | | | | | | | | | | |
| Household income | | | 0.015 | * | 0.015 | * | 0.015 | * | 0.015 | * |
| Home ownership (1 = yes) | | | -0.095 | * | -0.095 | * | -0.095 | * | -0.095 | * |
| Length of residence | | | -0.035 | ** | -0.035 | ** | -0.035 | ** | -0.035 | ** |
| | | | | | | | | | | |
| Intermarried x female | | | | | -0.035 | | | | -0.220 | |
| Intermarried x minority | | | | | | | -0.106 | | -0.186 | |
| Female x minority | | | | | | | | | 0.362 | ** |
| Intermarried x female x minority | | | | | | | | | 0.120 | |
| | | | | | | | | | | |
| Intercept | -0.181 | *** | -0.279 | * | -0.280 | * | -0.280 | * | -0.264 | † |
| Log likelihood | -9284.8 | | -8618.6 | | -8618.5 | | -8618.4 | | -8613.5 | |
| *rho* | -0.295 | † | -0.519 | *** | -0.513 | *** | -0.563 | ** | -0.595 | ** |
| *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < .10$ (two-tailed test) | | | | | | | | | | |
| [a] Reference group. | | | | | | | | | | |
| *Source*: The 2007 Canadian General Social Survey. | | | | | | | | | | |

Figure 1 Probit Estimates Showing the Interactions of Intermarriage, Gender and Minority Status on Receipt of Domestic Assistance




*Note*: Probit estimates are obtained from Table 2. A constant (.05) is added to each cell to enhance the visual effects of the variables.
*Source*: The 2007 Canadian General Social Survey.