Is it better to intermarry? Marital composition and suicide risk among native-born and migrant persons in Sweden

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Abstract

Marriage is protective against suicide across populations, including for persons of different ethnicities and immigrant backgrounds. However, the well-being benefits of marriage are contingent upon marital characteristics—such as conflict and quality—that may vary among persons of different migration backgrounds in interaction with the migration background of their spouse. Using Swedish register data, we compare suicide mortality risk among married persons on the basis of their and their spouse's migration background. We find that relative to those in a native Swede-Swede union, Swedish men married to female immigrants and immigrant women married to native men are at higher risk of death by suicide, while immigrants of both genders who are married to someone from their birth country have lower suicide mortality. The findings support hypotheses about the strains that may be encountered by those who intermarry, as well as the potential selection of individuals into inter- and intra-marriages.

Background

Marriage, health and well-being

In his classic social study on suicide, Durkheim (1897) argued that it was often driven by an extreme lack of integration with society. He considered marriage to be one of the most important indicators of social integration, and noted that the frequency of suicide deaths was much lower among the married. Later research provided further compelling evidence that being married is linked to lower suicidal behavior (Stack et al. 1990; Martikainen and Valkonen 1996; Kposowa 2002). The broader longevity advantage of married individuals was documented by William Farr as early as 1858 (Farr 1858). Since these seminal early studies were published, substantial benefits of being married have been found for a host of both physical and mental health indicators, including reduced rates of acute conditions and work disability (Verbrugge 1979), earlier-stage diagnosis of melanoma cancer and survival from 12 common cancers (Kravdal 2001; McLaughlin et al. 2011), and lower risk of disability at older ages (Goldman, Korenman, and Weinstein 1995). However, these benefits do not always apply equally across social groups. Numerous studies have shown variations in both suicide and general mortality risk by marital status across cohorts (Hu and Goldman 1990), by gender (Kposowa 2002; Rendall et al. 2011), for different causes of death (Martikainen and Valkonen 1996), and according to different spousal age gaps (Drefahl 2010).

Scholars have offered non-mutually exclusive explanations – marital selection and marital protection – for the relationship between marriage and improved health and lower mortality (Goldman 1993). The marital selection hypothesis suggests that persons with certain traits and health-related behaviors are positively selected into marriage and are more likely to stay married (Johnson et al. 2000). The marriage protection hypothesis draws on the socially integrative functions of marriage. Supporting this hypothesis, researchers have shown that marriage is related to positive physical and mental health outcomes though improved health behaviors and by providing economic security and larger social networks (Durkheim 1897; Umberson 1987; Ross 1995; Waite 1995). Empirical findings suggest that many spouses (attempt to) monitor their partners' health behaviors, and may encourage a healthy diet and regular sleeping patterns, greater physical activity, and limits on alcohol and cigarette consumption (Umberson 1992; Wilson and Oswald 2005; August and Sorkin 2010). Others indicate that the health-related social control, emotional support and economic security provided by spouses can be especially important around stressful times, such as after being diagnosed with a new illness (Margolis 2013) or experiencing involuntary job loss (Gallo et al. 2000).

Other research findings have questioned whether it is the presence or the quality of a marital tie that is most important for promoting health and well-being. Besides being protective, marriage also has the potential to introduce interpersonal stressors that may pose health challenges. Indeed, there is a compelling evidence that marital strain is linked to poorer self-rated health and psychological well-being, as well as higher morbidity and mortality from cardiovascular disease (Robles and Kiecolt-Glaser 2003; Umberson et al. 2006; Ryan and Willits 2007). Ross (1995) demonstrated that persons in unhappy relationships exhibited higher levels of depression than those with no partner, suggesting that strained partnerships can negate some of the benefits of marriage. Other scholars found a strong positive association between discord in the partner relationship and suicidal attempts even after adjustment for previous psychiatric diagnoses or psychological distress (Kaslow et al. 2000; Robustelli et al. 2015). Although married and non-married Air Force members who committed suicide from 1996–2006 reported a similar number of life stressors in the day before the suicide, married persons were more likely to report interpersonal stressors in the 30 days before the event (Martin et al. 2013). To explain these findings, the authors argued that married decedents had both generally more social contacts and more problematic contacts where interpersonal conflicts may occur. Another widely-documented source of conflict in marriages is cultural differences between spouses, which commonly occur in inter-racial and inter-ethnic families.

Inter- and intra-ethnic marriages and well-being

The survival and health advantages of married individuals have been documented across many nations, as well as across different racial and ethnic groups within nations. However, questions about whether it is more beneficial for mental health and general well-being to be married to someone from the same (intramarriage) or a different culture (intermarriage) remain under-studied.

On the one hand, it may be that intermarriage is generally beneficial for both natives and immigrants as it increases cultural capital, which may enhance individuals' sense of meaning and well-being. Immigrant populations may especially stand to benefit from marrying native spouses. Intermarriage has long been considered as a key measure of the social, economic, cultural and political integration of different ethnic and migrant groups (Alba and Golden 1986; Rodríguez-García 2015). Living with native-born spouses can be an effective way to improve language skills, get access to social networks, and gain knowledge about local cultures, social norms, and healthcare systems, all of which are essential for improving immigrants' integration into host societies, and thereby, their well-being. Providing evidence that intermarriage benefits migrants, in a study of all marriages that occurred in Sweden from 1968 to 2003, Dribe and Lundh (2008) showed that intermarriage was strongly and positively related to immigrants' economic outcomes. Specifically, immigrants married to natives were more likely to be employed and had higher individual and household incomes than immigrants married to another immigrants (Dribe and Lundh 2008; Tegunimataka 2017). The intermarriage premium for economic outcomes has also been found in Denmark (Elwert and Tegunimataka 2016), Australia (Meng and Gregory 2005), France (Meng and Meurs 2009), and the U.S. (Furtado and Song 2015). The selection of immigrants with higher earning potential into intermarriage with native persons has been put forward to explain this relationship (Dribe and Nystedt 2011). However, positive effects of intermarriage on economic outcomes for immigrants to Denmark have been observed even at the time of household formation, suggesting that intermarriage may truly improve integration and economic achievements for at least some immigrant groups (Elwert and Tegunimataka 2016).

On the other hand, intermarriage may be accompanied by stressors, including cultural conflicts between spouses and extended family members, reduced marital quality, and experiences with discrimination. Literature on intermarriage and marital stability indicates that, despite being beneficial for immigrants' integration and economic outcomes, intermarriages are less stable than intramarriages (Kalmijn et al. 2005; Zhang and Van Hook 2009; Dribe and Lundh 2012; Milewski and Kulu 2014). Scholars have hypothesized that the risk of divorce is higher for intermarriages relative to intramarried couples because of differences in socio-cultural backgrounds, e.g., in values, norms, attitudes, and communication styles, which result in increased misunderstandings and opportunities for marital discord (Kalmijn et al. 2005; Zhang and Van Hook 2009). Furthermore, previous research suggests that the risk of divorce increases as cultural differences within interethnic spousal dyads increase (Kalmijn et al. 2005). For example, in their analysis of the Swedish population, Dribe and Lundh (2012) found that the relative risk of union dissolution in intermarriages involving individuals from cultures that were the most similar to Sweden was just 10-38% higher than in endogamous native couples, while the risk of dissolution was 61- 155% higher in intermarriages involving migrants from the most culturally dissimilar countries (Dribe and Lundh 2012).

In addition to experiencing marital strain due to cultural differences, prior work on interracial marriages indicates that intermarried individuals may face conflicting social and cultural obligations, discrimination, and lack of support from family and friends, all of which may increase psychological distress within spousal dyads (Mills et al. 1995; Hohmann-Marriott and Amato 2008; Herman and Campbell 2012). Supporting this proposition, Bratter and Eschbach (2006) found greater psychological distress among both spouses in interracial marriages relative to those in same-race marriages. Research examining psychological well-being in Turkish-British marital dyads showed that both migrant and native-born spouses had higher depression scores if they reported cultural conflict (Baltas and Steptoe 2000). Using longitudinal data from nine European countries, a recent study found better mental health among intermarried immigrants but not among their native-born spouses, highlighting that the relationship between martial composition and mental health differs by nativity within spousal dyads (Milewski and Gawron 2019).

Research questions and hypotheses

Drawing on conflicting findings regarding the economic outcomes and marital stability of inter-marriages, in the present study we investigate whether the risk of suicide among married persons of both Swedish and migrant origins depends on their marital composition. Given evidence that cultural differences can create marital discord in and instability in interethnic marriages, we hypothesize that Swedes married to immigrants (Sw-Im) and immigrants married to Swedes (Im-Sw) have a higher risk of suicide relative to Swedes married to other natives (Sw-Sw). Consistent with research showing that healthier individuals are more likely to migrate, we hypothesize that migrants married to migrants from their own countries (Im-Intra-Im) have the lowest risk of suicide of all groups. However, it is also possible that immigrants in Im-Intra-Im marriages have somewhat higher suicide risk than Sw-Sw marriages, simply because relocation to a different country is linked to psychological stress. Finally, on the one hand we may expect migrants married to migrants from other countries (Im-Inter-Im) to have an elevated risk of suicide compared with Sw-Sw marriages, since migrants in these marriages may experience spousal cultural conflicts, while at the same time not reaping the potential benefits associated with marrying a native spouse. On the other hand, both spouses in Im-Inter-Im marriages share the migration experience and undergo some health selection prior to moving to the host country. Therefore, an alternative possibility is that those in Im-Inter-Im marriages have similar risk of suicide as those in Sw-Sw marriages.

We further examine whether among married migrants suicide risk differs between those married to a Swede or a migrant from a different country compared to those married to another migrant from their birth country. We expect that those married to migrants from their own country (Im-Intra-Im marriages) will show lower risk of suicide than Im-Sw and Im-Inter-Im marriages. For the reasons mentioned above, it is reasonable to expect that cultural conflicts may be less salient in Im-Inter-Im marriages than in Im-Sw marriages. Additionally, drawing on studies in the U.S. indicating that African Americans (Crowder and Tolnay 2000) and Latinos (Lee and Edmonston 2005) who inter-marry belong to the most socioeconomically advantaged groups (Fu and Heaton 2008), migrants in Im-Intra-Im marriages may be better educated on average than migrants in other types of marriages. Given these arguments we may also see similar risk of suicide in Im-Inter-Im and Im-Intra-Im marriages.

Methods

In this study, we use register data that contains a wide variety of population characteristics for all Swedish residents, including demographic characteristics, social status, and cause-of-death. These registers have nationwide coverage, and there is low risk of inaccurate linkages across registers (Ludvigsson et al. 2009). The study population consists of all people aged 18 or older who were living in the country between January 1, 1991 and December 31, 2012. New individuals enter the study from the month they turn 18 and marry or through immigration to Sweden after age 18 during 1991–2016. All individuals were followed until death, censoring due to emigration, or December 31, 2016; whichever comes first.

The main variable of interest – *marital composition* – was defined in the following categories: Swedish–Swedish (Sw-Sw), Immigrant–Swedish (Im-Sw), immigrant married to immigrant from different country of birth (Im-Inter-Im), immigrant married to immigrant from the same country of birth (Im-Intra-Im), and Swedish-Immigrant (Sw-Im). The latter group represents the same spousal dyads as Im-Sw, but the mortality hazard is estimated for the Swedish spouse married to an immigrant rather than the migrant spouse married to a Swede (Im-Sw). To elucidate and control for the effects of selection and socio-demographic composition, we included the following control variables: education, income, employment, and the presence of a child under 18. We focus on intact married couples to avoid the potential effect of marital disruption through divorce or widowhood on suicide mortality (Martikainen and Valkonen 1996). Following Durkheim's social integration theory, Veevers (1973) proposed that parental status could play an important role in shaping suicidal behavior, as the social and personal adjustments of childless individuals might be less satisfactory than the adjustment of parents. Later research showed that the age of a child rather was a more important predictor of suicidal behavior than the presence and the number of children, particularly for mothers (Qin and Mortensen 2003). Hence, we also control for the presence of a minor child in the household. Three control variables are treated as annually time-varying: 1) *income,* measured as disposable individual income, which is split into quintiles according to the income distribution of the whole Swedish population in each year considered; 2) *employment*, which is broken down into employed vs. unemployed; and 3) *the presence of a child under 18 years* in the household.

We use hazard regression models to examine the influence of marital compositions and other characteristics on individual mortality (Gompertz 1977). The failure event in our analysis is the death of the individual due to suicide. The baseline hazard of our model is a function of age, and is assumed to follow a Gompertz distribution. Considering that the baseline risk of suicide death is likely to differ by gender, we run models on men and women separately. In the first model we include marital composition to assess whether suicide mortality differs across different marriage groups. We then add socioeconomic characteristics (education, income and employment in Model 2), and the presence of a

minor child (in Model 3) to assess whether inclusion of these controls modifies the observed relationships between marital composition and suicide mortality.

In the second step, we restrict analyses to the immigrant population to assess variations in suicide risk among migrants married to a Swede, another migrant from a different country of birth, and another migrant from the same country of birth. We also examine whether accounting for age at immigration and country of birth attenuates the relationship between marital composition and suicide mortality among migrants. The variable country of birth, which was initially grouped by Statistics Sweden, was further grouped into three larger groups to increase the number of events within each martial composition group: 1) Nordic countries, Western Europe, North America, Australia, and New Zealand, 2) Other Europe which includes (Poland, Former countries of Soviet Union, Former Yugoslavia, Balkans, and Baltic countries) and 3) All other countries (Asia, Africa, and South America) (Table 1).

Results

Suicide and marital composition among married persons of both Swedish and migrant origins

Models 1 and 4 in Table 2 show unadjusted suicide mortality hazard ratios by marital composition group for men and women, respectively. The comparison group for marital composition is Swedish individuals married to other Swedes (Sw-Sw), with the other categories again denoting migrants who are married to native Swedes (Im-Sw), migrants married to migrants with a different country of origin (Im-Inter- Im), migrants married to migrants from their same birth country (Im -Intra- Im), and Swedish individuals married to persons of migrant origin (Sw-Fr). Compared to Swedish men married to native-born women, Swedish men in Sw- Im marriages have 20% (Hazard Ratio [HR] = 1.20, 95% Confidence Interval [CI]: 1.09, 1.35) elevated hazard of death by suicide. The risk of suicide mortality for migrant men intermarried to another migrant (Im -Inter- Im) is similar to that of Swedish men in Sw-Sw marriages. In contrast, male migrants married to another migrant from the same country of birth have about 14% (HR=0.86, 95%CI: 0.77, 0.96) lower risk of suicide relative to men in Sw-Sw marriages. The patterns are slightly different for women. The hazard of suicide mortality among Swedish women in Sw-Im marriages is similar to that of Swedish women in Sw-Sw marriages. However, immigrant women intermarried with Swedish men have about 62% elevated risk of death due to suicide compared to Swedish women in Sw-Sw marriages. In line with the patterns observed in the male study population, the risk of death among migrant women in Im-Inter-Im marriages and Swedish women in Sw-Sw marriages is similar, while being married to another migrant from the same country of birth is associated with a lower risk of suicide relative to women in Sw-Sw marriages (HR=0.84, 95%CI: 0.71, 0.99).

In Models 2 and 5, we tested whether socioeconomic characteristics account for suicide mortality differences across inter- and intra-marriage groups. The results show that having secondary+ education and high income predict a lower risk of suicide among both men and women, while employment status appears to be an important predictor of suicide death only among men. When socioeconomic status is included in Model 2, the risk of dying from suicide is slightly attenuated for men in Sw -Im marriages (HR=1.17, 95%CI: 1.05, 1.31). Holding the socioeconomic variables constant, the lower hazard of suicide mortality among men in Im-Intra-Im marriages decreases further (HR=0.673, 95%CI: 0.60, 0.76), suggesting that the lower SES of migrant men in these marriages explains why they do not receive even greater protections against suicide. Although Model 5 indicates that the risk of dying from suicide among women in Im-Sw marriages is slightly attenuated when socio-economic characteristics are included, it remains significantly higher compared to women in Sw-Sw marriages. As it does for men, accounting for differences in socio-economic characteristics across marriage groups results in a further

reduction of mortality hazard for women in Im-Intra-Im marriages (HR = 0.63, 95%CI: 0.53, 0.76) relative to women in Sw-Sw marriages. Model 5 also reveals that women who are missing information on education have an increased suicide mortality hazard compared to women with primary education.

In Models 3 and 6 we examined whether having a minor child (under 18) confounds the relationship between martial composition and suicide death. Our analysis shows that having a minor child is independently related to a lower suicide risk for women (HR = 0.61, 95%CI: 0.53, 0.69), but not for men. Accounting for children only slightly attenuates an increased hazard of mortality for women in Im-Sw marriages compared to their female peers in Sw-Sw couples.

Suicide and marital composition among married persons of migrant origin

In further analysis we considered only the immigrant population. First, we run the model that includes marital composition groups as well as all previously selected covariates (Table 3, Models 1 and 3). In Models 2 and 4, we add country of birth to assess whether migrant-specific characteristics account for survival differences across inter- and intra-marriage groups.

In all analyses focusing on the immigrant population only, migrant intramarriages, i.e. immigrant men/women married to immigrant women/men from the same country (Im-intra-Im), are taken as the reference category. Model 1 of Table 3 shows that, when socioeconomic and parental status are hold constant, the hazard of death by suicide is 34% higher among men in Im-Sw marriages compared with men in Im-Intra-Im marriages (HR = 1.34, 95%CI: 1.13, 1.59). No suicide mortality differentials are observed among men in Im-Inter-Im and Im-Intra-Im marriages. In Model 3 (Table 3), which is adjusted for differences in socioeconomic and parental statuses, the risk of dying from suicide among women in Im-Sw marriages is about two times higher than for women in Im-Intra-Im marriages (HR = 2.13, 95%CI: 1.71, 2.65). As in the male sample, women in Im-Inter-Im marriages have hazard of suicide mortality similar to women in Im-Intra-Im marriages.

When country of birth is included in Models 2 and 4, the elevated hazard of mortality in Im-Sw marriages is completely attenuated among men (HR = 1.16, 95%CI: 0.97, 1.39) and is slightly reduced among women (HR = 1.97, 95%CI: 1.56, 2.47) compared to their peers of the same gender in Im-Intra-Im marriages. These analyses also show that both male and female immigrants from non-Western countries have lower hazard of suicide mortality relative to migrants from high-income countries – that is, those from Nordic, western European, and North American countries, along with Australia and New Zealand. Migrant men and women from other European countries have similar risk of suicide death as their peers from high-income countries.

To understand whether the elevated suicide mortality of immigrants in Im-Sw marriages is driven by country-specific characteristics that migrants bring along to the host country, we performed additional analyses splitting the immigrant sample between those originating in Western and non-Western countries. Models 1 and 2 of Table 4 show that controlling for socioeconomic and parental statuses, marital composition is unrelated to suicide mortality among migrant men and women from Nordic countries, western Europe, North America, Australia and New Zealand. In contrast, men and women from non-Western countries who are married to Swedes have significantly higher risk of suicide death compared to their same-sex peers in Im-Intra-Im marriages (Models 3 and 4 of Table 4). Specifically, being in Im-Sw marriages increased the hazard of suicide death by 56% among migrant men (1.56%, 95%CI: 1.13, 2.14), and almost tripled the risk among migrant women (HR = 2.91, 95%CI: 2.08, 4.08) relative to their counterparts married to persons from their same country of origin. These additional

analyses also revealed an increased risk of suicide among men in Im-Inter-Im marriages (HR = 1.50, 95%CI: 1.07, 2.11), although no similar pattern was found for women. Additionally, both male and female migrants from "other" European countries had greater risk of suicide mortality than their same-gender peers from other countries.

Finally, we performed additional analyses to test the hypothesis that immigrants who arrive to Sweden as children are more socially integrated in the mainstream society and, thus, are likely to resemble the host population with respect to cultural background and suicide patterns associated with marital composition. To do so, we repeat the regression analyses stratifying the immigrant sample into those who arrived in Sweden before and after age 18. Table 5 (Models 1 and 2) shows that holding country of birth and socioeconomic and parental statuses constant, there is no relationship between marital composition and hazard of suicide mortality among men and women who arrived to Sweden as children. However, when the same model is restricted to immigrants who arrived to Sweden as adults (Models 3 and 4, Table 5), women in Im-Sw marriages have about double the risk of suicide relative to women in Im-Intra-Im marriages (HR = 2.00, 95%CI: 1.57, 2.26).

DISCUSSION

In the present study we take a step toward developing a better understanding of marriage benefits for immigrants and natives by investigating variations in suicide risk across inter- and intra-ethnic marriages among both immigrants and native-born Swedes. We found that Swedish men married to female migrants and migrant women married to Swedish men were at a substantially higher risk of suicide compared to intra-married Swedish men and women, respectively. Additionally, our study revealed that migrant men and women married to migrants from the same country have markedly reduced risk of suicide relative to Swedes married to native-born. These findings partially support our initial hypotheses that marital strain due to cultural differences, potential conflicting social and cultural obligations, discrimination, and lack of support from family and friends might increase psychological distress within intermarried spousal dyads, which would be reflected in an increased risk of suicide in all inter-marriage groups relative to Swedish intra-marriages. They also highlight the potential selection of persons with different levels of social, economic, and psychological well-being into marriage with a native Swede or immigrant.

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Table 2. Mortality hazard ratios for marital composition groups in the total Swedish population, 1991–2012

	Men			Women		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Marital composition groups (ref: Sw-Sw)*						
Sw-Im	1.208***	1.173**	1.171**	1.118	1.083	1.077
	[1.085,1.345]	[1.053,1.306]	[1.052,1.304]	[0.908,1.376]	[0.880,1.334]	[0.875,1.327]
Im-Sw	1.09	1.04	1.04	1.622***	1.526***	1.481***
	[0.960,1.237]	[0.916,1.181]	[0.916,1.181]	[1.409,1.867]	[1.325,1.758]	[1.285,1.707]
Im-Inter-Im	0.994	0.805	0.805	1	0.789	0.771
	[0.790,1.251]	[0.638,1.014]	[0.638,1.014]	[0.708,1.413]	[0.557,1.117]	[0.544,1.091]
Im-Intra-Im	0.861**	0.673***	0.674***	0.838*	0.634***	0.639***
	[0.770,0.962]	[0.600,0.755]	[0.601,0.756]	[0.708,0.991]	[0.533,0.755]	[0.537,0.760]
Education (ref: Primary or secondary)						
Post-Second		0.767***	0.768***		0.796***	0.809***
		[0.718,0.820]	[0.719,0.821]		[0.721,0.879]	[0.732,0.893]
Missing		1.123	1.122		1.455*	1.430*
		[0.952,1.324]	[0.951,1.323]		[1.087,1.947]	[1.068,1.914]
Income (ref: Medium)						
Low		1.537***	1.535***		1.401***	1.380***
		[1.430,1.651]	[1.429,1.650]		[1.252,1.568]	[1.233,1.545]
High		0.601***	0.602***		0.556***	0.572***
		[0.564,0.639]	[0.565,0.640]		[0.506,0.612]	[0.520,0.629]
Employment status (ref: Employed)						
Unemployed		1.264***	1.264***		1.017	1.019
		[1.134,1.408]	[1.134,1.409]		[0.865,1.195]	[0.867,1.198]
Parental status (ref: Having no or older children)						
Having a minor child			0.963			0.606***
			[0.888,1.044]			[0.532,0.690]
Observations	12897950			13897357		
Nr. deaths	6229			2549		

***** Model 1: Marital composition groups (Sw-Sw: Swedish – Swedish, Sw-Im: Swedish – Immigrant; Im-Sw: Immigrant – Swedish; Im-Inter-Im: Immigrant – Immigrant from different country of birth; Im-Intra-Im: Immigrant-– Immigrant from the same country of birth); Model 2: Model 1+ socioeconomic characteristics; Model 3: Model 2 + having a child under 18

Table 3. Mortality hazard ratios for marital composition groups in the immigrant population, Sweden, 1991–2012

	Men		**Women**	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Marital composition groups (ref: Im-Intra-Im)*				
Im-Sw	1.338***	1.162	2.129***	1.965***
	[1.130,1.585]	[0.971,1.390]	[1.709,2.651]	[1.564,2.469]
Im-Inter-Im	1.195	1.209	1.229	1.201
	[0.929,1.539]	[0.939,1.557]	[0.842,1.795]	[0.822,1.754]
Education (ref: Primary or secondary)				
Post-Second	0.677***	0.708***	0.722**	0.731*
	[0.558,0.822]	[0.582,0.860]	[0.565,0.924]	[0.571,0.937]
Missing	0.711	0.729	1.367	1.418
	[0.501,1.009]	[0.514,1.035]	[0.913,2.048]	[0.946,2.127]
Income (ref: Medium)				
Low	1.312**	1.399***	1.158	1.216
	[1.077,1.599]	[1.147,1.706]	[0.895,1.498]	[0.939,1.575]
High	0.851	0.808*	0.720**	0.684**
	[0.703,1.031]	[0.667,0.980]	[0.564,0.921]	[0.534,0.876]
Employment status (ref: Employed)				
Unemployed	0.912	0.95	0.848	0.847
	[0.667,1.247]	[0.695,1.300]	[0.570,1.262]	[0.569,1.261]

Parental status (ref: Having no or older children)				
Having a minor child	0.842	0.928	0.573***	0.599***
	[0.680,1.042]	[0.746,1.154]	[0.430,0.765]	[0.448,0.801]
Country of birth (ref: Nordic, WE, North Am, AUS, NZ)*				
Other Europe		0.855		0.987
All other countries		[0.705,1.038]		[0.770,1.266]
Observations	2225792		2907401	
Nr. deaths	660		397	

* Nordic countries, Western Europe, North America, Australia, New Zealand

Table 4. Mortality hazard ratios for suicide by marital composition groups in the immigrant population for Western and non-Western countries, Sweden, 1991–2012

	Western countries		Non-Western countries	
	Men	Women	Men	Women
Marital composition groups (ref: Im-Intra-Im)*				
Im-Sw	0.949	1.392	1.556**	2.912***
	[0.744,1.211]	[1.000,1.938]	[1.129,2.144]	[2.077,4.084]
Im-Inter-Im	0.789	0.998	1.503*	1.433
	[0.496,1.255]	[0.509,1.956]	[1.071,2.109]	[0.865,2.375]
Education (ref: Primary or secondary)				
Post-Second	0.706*	0.515**	0.740*	1.002
	[0.516,0.965]	[0.327,0.809]	[0.556,0.984]	[0.710,1.414]
Missing	0.578	1.318	0.934	1.769*
	[0.329,1.015]	[0.665,2.614]	[0.586,1.489]	[1.047,2.989]
Income (ref: Medium)				
Low	1.425*	1.139	1.239	1.082
	[1.056,1.922]	[0.751,1.726]	[0.914,1.678]	[0.736,1.590]
High	0.755	0.694	0.914	0.808
	[0.564,1.011]	[0.473,1.018]	[0.675,1.239]	[0.550,1.186]
Employment status (ref: Employed)				
Unemployed	1.158	0.632	0.737	0.895
	[0.691,1.942]	[0.277,1.442]	[0.452,1.200]	[0.513,1.562]
Parental status (ref: Having no or older children)				
Having a minor child	1.105	0.651	0.931	0.71

	[0.763,1.601]	[0.373,1.135]	[0.679,1.276]	[0.474,1.064]
Country of birth (ref: All other countries)*				
Other Europe			1.727***	2.133***
			[1.334,2.236]	[1.532,2.969]
Observations	511466	569240	1387634	1901118
Nr. deaths	294	166	270	167

Table 5. Mortality hazard ratios for marital composition groups in the immigrant population by age at immigration, Sweden, 1991–2012

	18 years or below at immigration		18+ years at immigration	
	Men	Women	Men	Women
Marital composition groups (ref: Fr-Intra-Fr)*				
Im-Sw	1.232	1.885	1.176	2.002***
	[0.725,2.093]	[0.967,3.674]	[0.966,1.432]	[1.567,2.558]
Im-Inter-Im	1.322	0.97	1.188	1.223
	[0.636,2.748]	[0.312,3.017]	[0.905,1.558]	[0.818,1.829]
Education (ref: Primary or secondary)				
Post-Second	0.619	0.526	0.726**	0.773
	[0.352,1.088]	[0.262,1.060]	[0.589,0.894]	[0.591,1.010]
Missing	0	0	0.771	1.550*
			[0.542,1.097]	[1.027,2.340]
Income (ref: Medium)				
Low	2.230**	2.296*	1.330**	1.103
	[1.283,3.876]	[1.218,4.326]	[1.076,1.645]	[0.832,1.462]
High	0.692	0.435**	0.841	0.754*

	[0.428,1.119]	[0.238,0.795]	[0.681,1.038]	[0.575,0.989]
Employment status (ref: Employed)				
Unemployed	1.248	0.998	0.887	0.795
	[0.637,2.444]	[0.448,2.222]	[0.622,1.266]	[0.502,1.260]
Parental status (ref: Having no or older children)				
Having a minor child	0.692	0.429**	0.978	0.643**
	[0.414,1.157]	[0.226,0.816]	[0.770,1.243]	[0.465,0.889]
Country of birth (ref: Nordic, WE, North Am, AUS, NZ)*				
Other Europe	0.896	0.746	0.842	1.001
	[0.498,1.613]	[0.326,1.705]	[0.685,1.035]	[0.767,1.305]
Rest	0.708	0.927	0.463***	0.453***
	[0.369,1.360]	[0.440,1.953]	[0.361,0.594]	[0.324,0.634]
Observations	318853	429588	1899100	2470358
Nr. deaths	96	64	564	333