



Access to occupational networks and ethnic variation of depressive symptoms in young adults in Sweden



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ABSTRACT

Social capital research has recognized the relevance of occupational network contacts for individuals' life chances and status attainment, and found distinct associations dependent on ethnic background. A still fairly unexplored area is the health implications of occupational networks. The current approach thus seeks to study the relationship between access to occupational social capital and depressive symptoms in early adulthood, and to examine whether the associations differ between persons with native Swedish parents and those with parents born in Iran and the former Yugoslavia.

The two-wave panel comprised 19- and 23-year-old Swedish citizens whose parents were born in either Sweden, Iran or the former Yugoslavia. The composition of respondents' occupational networks contacts was measured with a so-called position generator. Depressive symptoms were assessed with a two-item depression screener. A population-averaged model was used to estimate the associations between depressive symptoms and access to occupational contact networks.

Similar levels of depressive symptoms in respondents with parents born in Sweden and Yugoslavia were contrasted by a notably higher prevalence of these conditions in those with an Iranian background. After socioeconomic conditions were adjusted for, regression analysis showed that the propensity for depressive symptoms in women with an Iranian background increased with a higher number of manual class contacts, and decreased for men and women with Iranian parents with a higher number of prestigious occupational connections. The respective associations in persons with native Swedish parents and parents from the former Yugoslavia are partly reversed.

Access to occupational contact networks, but also perceived ethnic identity, explained a large portion of the ethnic variation in depression. Mainly the group with an Iranian background seems to benefit from prestigious occupational contacts. Among those with an Iranian background, social status concerns and expected marginalization in manual class occupations may have contributed to their propensity for depressive symptoms.

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1. Introduction

Psychological complaints and depressive symptoms in adolescence constitute a burden of global extent (Gore et al., 2011; Patel et al., 2007; Thapar et al., 2012), and represent the most prevalent health problem among youths in Sweden (Hagquist, 2010; Wiklund et al., 2012). Previous research has shown that these types of complaints are more widespread among women (Nolen-

Hoeksema, 2001; Piccinelli, 2000) and affect immigrants to a larger extent than natives (Hjern, 2012), but also vary notably between different ethnic groups (Sundquist et al., 2000; Tinghög et al., 2007). While stressors associated with migration and acculturation experiences have been linked to poor mental health in first-generation immigrants (Bhugra, 2004; Porter and Haslam, 2005), findings for descendants of immigrants are less consistent. Previous studies referring to the Swedish case have found considerable intergroup variation in mental health, but still poorer mental health in individuals with foreign-born parents compared to the native population (Gilliver et al., 2014; Leão et al., 2005). It has been previously held that descendants of immigrants – though they did not go through the stressful process of migration – may

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nevertheless share their parents' experience of social exclusion, acculturation difficulties, and socioeconomic disadvantages in the receiving country (Heath et al., 2008; Mood et al., 2016). Detrimental conditions in school and on the labor market, sociocultural differences, encounters with discrimination, and distinct health behaviors may contribute to the persistent health disadvantages of people with a foreign background (Leão et al., 2005; Sieberer et al., 2012).

Research on the social determinants of mental health has recognized social capital as a potentially important support mechanism (Almedom, 2005; De Silva et al., 2005). Ambiguities in defining, measuring and operationalizing social capital have led to ongoing debate as to how it translates into health (Moore and Kawachi, 2017; Rostila, 2011a; Szreter and Woolcock, 2004). In general, access to a broad range of social capital is believed to improve health (Moore and Kawachi, 2017). However, dependent on contextual conditions, social capital can function socially exclusively and inclusively, and thus result in negative and positive effects (Szreter and Woolcock, 2004). Moreover, comparative studies have found distinct health implications of social capital in individuals of foreign and non-foreign origin (Lorant et al., 2016). Relative to their credentials and socioeconomic conditions, people with an immigrant background encounter more difficulties than non-foreign people do (Kelly and Hedman, 2016), and are thus expected to receive greater health returns from social capital.

In what follows, social capital is understood as individuals' accumulated resources that are embedded in their social relationships and released through social interactions (Bourdieu, 1986). Less an individual characteristic, social capital is an ecological feature that emerges from social ties (Lochner et al., 1999). It can further be disaggregated into cognitive and structural components (Harpham et al., 2002; McKenzie et al., 2002). Cognitive social capital plays a salutary role, through supportive social ties and interpersonal social relationships, for a person's mental health and well-being. Perceptions of trust, reciprocity, sharing, and emotional support are essential ingredients of cognitive social capital, and are only accessible through social ties (Harpham et al., 2002). They serve as resources that facilitate stress resistance and coping capability, and thus reduce one's susceptibility to mental ill-health (Thoits, 2011). Whereas cognitive social capital is commonly framed as "bonding" social capital, which intensifies existing network support, in contrast "bridging" structural social capital denotes the potential opportunities offered by social networks (De Silva et al., 2005; Rostila, 2011b). The access to structural positions mobilizes social resources that are embedded in individuals' social networks (Song and Lin, 2009). The roles, behaviors, practices, and knowledge attached to certain occupational positions assemble what Lin and Dumin (1986) term "instrumental action", and may improve individuals' labor market and career opportunities (Granovetter, 1973). Individuals' access to extensive occupational networks has been affirmed to enhance status attainment (Lin, 1999), and is particularly advantageous in late adolescence when school-leavers enter the labor market or begin higher education (Hällsten et al., 2017a).

In order to sample individuals' access to structural positions, Lin and Dumin (1986) proposed the so-called position generator to map the hierarchical ordering of occupational positions within individuals' social networks. Previous implementations of position generator instruments have found convincing support for the mental health impacts of social network resources and occupational contacts beyond the effects of social support (Bassett and Moore, 2013; Song and Lin, 2009; Verhaeghe and Tampubolon, 2012). Several mechanisms have been pointed out as evoking the association between access to occupational contacts and health: a higher quantity and diversity of occupational contacts is assumed

to provide a greater variety of health information than a network comprising only a small number of occupations (Umberson and Montez, 2010). Further, behavioral aspects linked to others' occupational habitus and prestige, but also social monitoring, modeling, and comparison, may operate as mechanisms that exert influences on health (Thoits, 2011). In addition, network members' resources are believed to reinforce individuals' identification, self-esteem, and perception of status positions, which in turn could have positive effects on mental health (Song and Lin, 2009). In general, individuals' access to higher positions in the occupational hierarchy, and likewise more prestigious positions, are expected to render better mental health returns than positions with lower status or prestige (Lin, 2000).

As reversed causation and selection processes possibly contribute to the association between social capital and mental health (Giordano and Lindström, 2015), they may also obscure the mediating role of occupational contacts in the association between ethnic background and depression. For example, persons with psychological disorders (e.g. depression) may have difficulties developing and maintaining relationships with others who hold strategically important positions. Similar to the notion that the health implications of social capital are context-dependent (Szreter and Woolcock, 2004), immigrant background is also a potentially relevant factor to consider when examining the associations with health. For example, ethnic homophily – the often observed principle of bonding social capital that describes the tendency to interact with similar others – has shown to predict better health in natives, but has revealed adverse health effects for immigrants (Rostila, 2010). Accordingly, homophily may function as a mediator that structures the distribution and acquisition of material and non-material resources relevant for health. For ethnic minorities in less powerful and socially disadvantaged conditions ethnic homophily likely constrains the quality and quantity of health-related resources.

Sweden represents an interesting context for exploring ethnic differences in depression, and the mediating role of occupational networks in this association. Labor immigrants and refugees contributed to a comparably high share of foreign-born residents in Sweden (about 16% in 2016 (OECD, 2016)). Similar to other countries, in particular persons with refugee background and their children have limited contact opportunities and face more challenges to integrate in the labor market compared to the native (Swedish) population (Bevelander and Pendakur, 2014; Hällsten et al., 2017b).

Descendants of Iranian and Yugoslavian immigrants, who constitute some of the largest populations with a foreign background in Sweden, may exemplify relevant groups for exploring the relationship between occupational social capital and depressive symptoms. While Yugoslav immigrants are the largest European group of foreign origin outside the Nordic states in Sweden, Iranian immigrants represent the second largest non-European group (of foreign origin). The first large wave of Iranian immigrants came to Sweden as refugees in the wake of the Islamic revolution in 1979, and belonged to the well-educated middle class in Iran. Their educational level was considerably higher than that of Iranians who fled to Sweden during the 1980s after the war between Iran and Iraq, and of Iranian Kurds who came to Sweden in the 1990s. The first wave of Yugoslavian immigrants arrived in Sweden in the 1960s and 1970s, and were mostly low-skilled and recruited for manufacturing jobs (Jonsson, 2007). The socioeconomic profile of Yugoslavian labor force immigrants coming to Sweden in the 1960s and 1970s was more homogeneous than that of Yugoslavian civil war refugees who arrived in Sweden in the 1990s. As socioeconomic credentials regulate how social capital is distributed and structured, access to social capital likely varies by ethnic origin,

ethnic identity, and immigration wave (Johnson et al., 2017). Furthermore, the selective character of migration has been noted as significant determinant for the educational achievements of children of immigrants (Feliciano, 2005), and clearly applies to those of Iranian descent: although descendants of immigrants, including those of Iranian and Yugoslavian origin, are more likely to drop out of school, particularly Iranians are overrepresented in academic programs. Even more striking are the records of girls of Iranian origin, who outperform all other groups (Jackson et al., 2012). When it comes to post-secondary education as well, descendants of immigrants are rather reluctant to select vocational training and tend to choose academic studies instead (Jonsson and Rudolphi, 2011).

Findings of earlier research encourage a gender-specific approach when examining the social determinants of depressive symptoms. The prevalence of and susceptibility to mental health problems during early adulthood differ by gender, usually to the disadvantage of women (Nolen-Hoeksema, 2001). In comparison to young men, young women's health, health behavior and well-being have been shown to respond more sensitively to social interactions and social network influences (Meadows et al., 2006; Miething et al., 2016). The stress-buffering effects of social capital have also been affirmed to be more efficient for women (Webber and Huxley, 2007).

1.1. Aims of the study

This study aims to investigate whether occupational social capital explains the ethnic variation in the prevalence of depressive symptoms in 19- and 23-year-old men and women whose parents were born in Sweden, Iran, or the former Yugoslavia. A position generator measure is used to map the stratified structure of respondents' occupational network contacts. In line with the notion that prestigious occupational contacts are more rewarding (Lin, 2000), they are hypothesized to reduce the propensity for depressive symptoms. Correspondingly, connections to class positions in the lower strata are expected to predict higher magnitudes of depression. Given the structural disadvantages in status attainment and labor market entry of descendants of immigrants, occupational social capital is hypothesized to have a greater importance for persons with a non-Swedish background. Compared with respondents born to native Swedes, their contacts with lower occupational positions are expected to result in higher magnitudes of depression, while prestigious connections are assumed to have a stronger protective effect.

2. Data and methods

2.1. Study material

The study utilizes a Swedish two-wave survey panel called "Social Capital and Labor Market Integration: A Cohort Study", a randomly selected representative sample of Swedish residents born in 1990. The strategic sample, consisting of 5695 Swedish citizens, was stratified into three ethnic subsamples: the first comprised all individuals with at least one parent born in Iran; the second covered 50% of all Swedish citizens in that cohort with at least one parent born in the former Yugoslavia; and the third referred to individuals whose parents were born in Sweden, representing 2.5% of the total population at that age in Sweden. The majority of respondents had reached age 19 at the time of first the interview in 2009, and 23 at the time of the follow-up study in 2013. The survey was conducted by Statistics Sweden (SCB) as a telephone interview. Non-response was mainly due to non-reachability, as it was difficult to contact users of unregistered

pre-paid phones. In the first round 2942 individuals were reached for an interview, and 2244 respondents were available for the follow-up. The present study was based on individuals that had full information on all study variables in the first round ($n = 2460$) and the follow-up ($n = 1933$). Because 1315 respondents participated in both rounds of the survey, the effective study sample comprised 3078 respondents. This corresponds to a total of 4393 observations and a response rate of 54.0%. The composition of the study sample is illustrated in Fig. 1. The survey data are linked to administrative registers, which allowed for the derivation of complementary information on respondents' school performance, parents' occupations, and parents' civil status.

2.2. Depressive symptoms

A two-item depression screener based on the Patient Health Questionnaire-2 (PHQ-2) was used as outcome (Kroenke et al., 2003). The PHQ-2 taps criteria of depressive disorders ("Feeling down, depressed or hopeless") and anhedonia ("Little interest or pleasure in doing things"). The reliability and validity of the construct have been previously proven (Löwe et al., 2005; Monahan et al., 2009). The data material used in this study utilizes the two items in fairly modified form: the first item asked whether a respondent "has been depressed" during the past year and included three response alternatives, while the second referred to the statement "I have energy to do things" and included five response options. In order to construct a scale of "depressive symptoms", the response categories were recoded in the following manner: responses to the question "has been depressed" were scored 0 ("not affected"), 1 ("slightly affected"), or 2 ("much affected"), while responses to the statement "I have energy to do things" were scored 0 ("agree" and "strongly agree"), 1 ("nor agree disagree"), or 2 ("disagree" and "strongly disagree"). The subsequently constructed scale of depressive disorders tapped weaker and stronger symptoms of depressive moods and lack of energy, and resulted in values from 0 to 4. A value of 0 denoted the absence of depressive disorders, while 4 indicated the highest possible magnitude of complaints.

2.3. Occupational social capital

The position generator measure was used to sample the hierarchy of respondents' occupational contacts, and comprised 40 strategically chosen occupations. Respondents were asked whether they know someone in these listed occupations; these persons could be close friends, acquaintances, family members, relatives, or romantic partners. Three variables, derived from the position generator, denoted the accessibility of occupations: the variable "extensity of manual positions" accounted for the number of accessible manual occupational positions; "extensity of service class" assembled the number of reachable positions in the service class sector; and "mean prestige" accounted for the hierarchical positions of occupational contacts. This was based on the Standard International Occupational Prestige Scale (SIOPS) by Treiman (Ganzeboom and Treiman, 1996), and designates the average prestige each respondent is able to reach.

2.4. Ethnic background

The stratified study sample distinguished between young adult respondents whose parents were native Swedes and those with at least one parent born in either Iran or the former Yugoslavia. In addition, respondents with foreign-born parents were asked about their ethnic identity; specifically, whether they regard themselves as "Swedish" or perceive another identity that refers to their

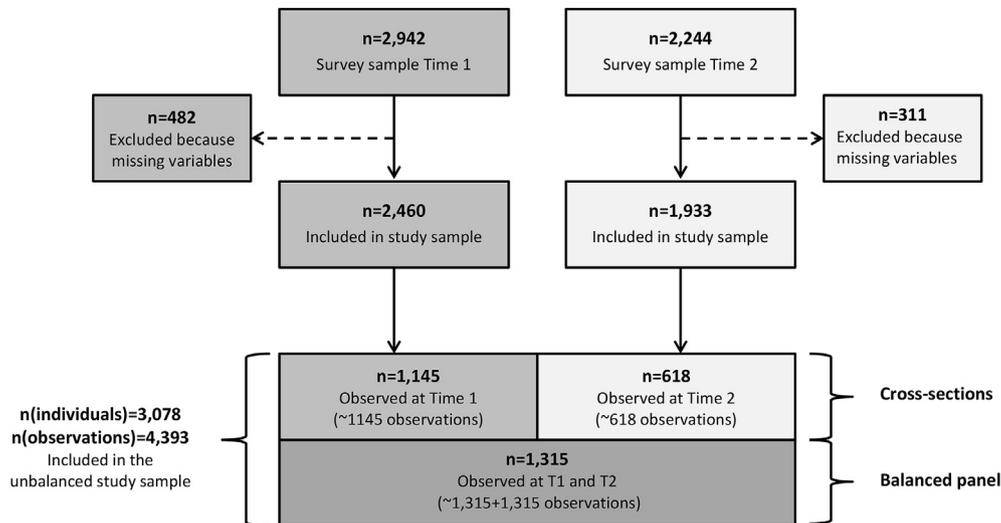


Fig. 1. Composition of the study sample.

parents' ethnic origin.

2.5. Socioeconomic and sociocultural background

School performance was measured with grade points from the ninth grade, when the respondents were still attending compulsory school. The grade points were transformed into deciles. *Employment status* denotes whether the respondent studies, works, studies and works, is in military service, is unemployed, or does something else. Due to the respondents' age and incomplete education, employment status provides a more adequate account of their socioeconomic conditions and career prospects. In addition, a covariate of *parents' occupational position* is used to provide a thorough control for respondents' socioeconomic background. The Swedish Standard Classification of Occupations (2012) (SYKK), which is based on qualification levels, was used to categorize occupations. Parents' occupations were categorized into four groups: (1) low-skilled occupations; (2) semi-skilled manual and non-manual routine jobs; (3) skilled occupations that require shorter academic training; and (4) specialized high-skilled occupations that implicate a longer academic education. If parents had different occupations, the higher position was taken into account. The binary variable *civil status* denoted whether or not respondents' parents were married.

2.6. Analytical strategy

The panel data were analyzed using generalized estimating equations (GEE). The binomial variance function in GEE enabled to estimate the categorical responses to the questions on depressive symptoms. The average marginal effects (AME) obtained through the GEE refer to population-averaged responses, and therefore do not permit inferences on the individual level. The AMEs denote how the predicted probabilities for the magnitudes of depressive symptoms differ between the categories of independent variables. For continuous predictors, the AMEs show the effect on the (highest possible) magnitude of depressive symptoms per unit increment the independent variable. Robust error variance corrected for inflated standard errors. Unadjusted and mutually adjusted main effects of occupational social capital and all other covariates on depressive symptoms were calculated. All analyses were performed separately for men and women. Subsequently performed

interactions were presented as linear combinations, denoting the contrasts of associations between occupational social capital and depressive symptoms between each ethnic group. Marginal effects plots demonstrate changes in the predicted mean of depressive symptoms by ethnic group and accessed occupational social capital.

3. Results

The distribution of variables of the study sample is shown in Table 1. The figures and results from F-Tests indicate that the prevalence of depressive symptoms differs markedly by ethnic origin (with the exception of men at Time 2). Whereas respondents of Swedish and Yugoslavian origin show similar levels of depressive symptoms, the ratings for respondents of Iranian origin are notably higher. Women in all subsamples disclose higher scores on the depression scale compared to men. The position generator items show that respondents with Iranian parents tend to have more service class connections and contacts with higher prestige compared to those with parents born Sweden and Yugoslavia.

The gender-specific estimations (AMEs) from GEE are presented in Table 2. The results in Model 1 show a significantly higher probability of disclosing the highest magnitude of depressive symptoms in men with an Iranian background compared to men with Yugoslavian parents (0.161, $p = 0.005$). For women with an Iranian background, the probability compared to women with Swedish-born parents is 29.4% higher ($p = 0.000$). The covariate for age shows an increase in depressive symptoms from age 19 to 23 in men by 9% ($p = 0.006$), while women's symptoms remain stable.

In Model 2 the variables on occupational social contacts are added. Each manual class contact reduces men's probability of depressive symptoms by 2.1% ($p = 0.005$). Access to *service class contacts* does not show significant associations with depressive symptoms in men or women. The third position generator item ("accessible prestige scores") shows a negative association with depression in men only (-0.023 , $p = 0.003$).

Model 3 considers additional covariates. School performance reveals negative relationship with depressive symptoms in men (-0.018 , $p = 0.022$) and women (-0.039 , $p = 0.000$). The covariate for employment status shows lower probabilities of depression for working men (-0.195 , $p = 0.000$) and women (-0.125 , $p = 0.015$) compared to men and women who study. In contrast, being unemployed shows increased probabilities for men (0.258, $p = 0.015$)

Table 1
Distribution of variables and observations in the study sample.

	Men							Women						
	Parents' country of birth:							Parents' country of birth:						
	Sweden		Iran		Yugoslavia		F-Test	Sweden		Iran		Yugoslavia		F-Test
	n(obs.)=1184		n(obs.)=385		n(obs.)=667			n(obs.)=1169		n(obs.)=402		n(obs.)=586		
Mean	SD	Mean	SD	Mean	SD		Mean	SD	Mean	SD	Mean	SD		
Depressive symptoms														
Time 1	0.46	0.78	0.64	0.94	0.44	0.80	**	0.66	0.96	1.00	1.11	0.61	0.96	**
Time 2	0.58	0.93	0.61	0.94	0.53	0.83	n.s.	0.65	0.97	0.90	1.08	0.60	0.90	**
Extensivity of manual class contacts														
Time 1	8.1	3.7	8.0	3.7	9.3	3.5	**	8.4	3.6	8.0	3.5	9.2	3.4	**
Time 2	9.6	4.0	9.9	4.0	10.6	3.6	**	9.3	3.7	8.7	3.7	10.0	3.9	**
Extensivity of service class contacts														
Time 1	3.0	2.1	4.2	2.2	3.3	2.1	**	3.1	2.1	4.3	2.2	3.4	2.2	**
Time 2	3.5	2.3	5.1	2.2	4.0	2.4	**	3.5	2.2	5.1	2.2	4.0	2.4	**
Accessible prestige scores														
Time 1	40.9	4.5	43.0	4.8	40.5	3.9	**	40.6	4.5	43.2	4.7	40.4	4.5	**
Time 2	41.1	4.5	43.1	4.3	40.8	3.8	**	41.1	4.4	44.1	4.8	41.6	4.1	**
School performance (grade points in deciles)	4.9	2.7	5.3	2.8	4.6	2.7	**	6.3	2.7	6.0	2.9	5.7	2.8	**
	n	%	n	%	n	%		n	%	n	%	n	%	
Ethnic identity														
Swedish	n/a		214	55.6	265	39.7		n/a		210	52.2	214	36.5	
Other than Swedish	n/a		171	44.4	402	60.3		n/a		192	47.8	372	63.5	
Age														
19 years (Time 1)	662	55.9	207	53.8	373	55.9		671	57.4	217	54.0	330	56.3	
23 years (Time 2)	522	44.1	178	46.2	294	44.1		498	42.6	185	46.0	256	43.7	
Employment status														
Studies only	321	27.1	156	40.5	217	32.5		319	27.3	141	35.1	173	29.5	
Works only	496	41.9	93	24.2	186	27.9		448	38.3	116	28.9	180	30.7	
Studies and works	120	10.1	69	17.9	94	14.1		211	18.1	103	25.6	131	22.4	
Military service (asked only at Time 1)	41	3.5	3	0.8	14	2.1		7	0.6	1	0.3	1	0.2	
Unemployed (asked only at Time 2)	45	3.8	19	4.9	42	6.3		29	2.5	16	4.0	24	4.1	
Something else	161	13.6	45	11.7	114	17.1		155	13.3	25	6.2	77	13.1	
Parents' occupation														
Low-skilled	24	2.0	23	6.0	64	9.6		7	0.6	18	4.5	63	10.8	
Semi-skilled	444	37.5	179	46.5	420	63.0		420	35.9	159	39.6	369	63.0	
Skilled, with shorter academic training	233	19.7	64	16.6	84	12.6		251	21.5	70	17.4	68	11.6	
Highly skilled, with longer academic training	483	40.8	119	30.9	99	14.8		491	42.0	155	38.6	86	14.7	
Parents' civil status														
Not married	443	37.4	133	34.6	162	24.3		428	36.6	142	35.3	126	21.5	
Married	741	62.6	252	65.5	505	75.7		741	63.4	260	64.7	460	78.5	

Note: n.s. - non-significant; ** $p < 0.01$.

and women (0.284, $p = 0.044$). Women with parents in skilled and highly skilled occupations are more prone to depressive symptoms than women with parents in low-skilled jobs. Women with married parents disclose a lower propensity for depressive symptoms (-0.133 , $p = 0.006$) compared to women with unmarried parents. Controlling the model for socioeconomic conditions and parents' background does not show notable decreases in associations between the predictors of interest (i.e., ethnic background and occupational network contacts) with depressive symptoms. The covariate *ethnic identity*, however, displays a 12% ($p = 0.028$) higher probability of depressive symptoms for men who perceive themselves as non-Swedish compared to men who perceive themselves as Swedish.

The interactions between ethnic background and social capital measures are presented in Table 3. The linear combinations show marked differences in associations between respondents with native Swedish and Iranian backgrounds.

The marginal effects plots in Figs. 2–4 provide a detailed illustration of interactions between occupational social capital, ethnic background, and perceived ethnic identity. Fig. 2 demonstrates the relationship between manual class contacts, ethnic background,

and depressive symptoms. Fig. 2a and b shows the results for respondents who perceive themselves as Swedish. The merely parallel lines for men in Fig. 2a indicate that depression is independent of access to manual class contacts, but nevertheless confirm a higher prevalence of symptoms in men with an Iranian background. Fig. 2b demonstrates the relationship between manual class connections and depression in women with an Iranian background compared to the weak corresponding associations for women with native Swedish and Yugoslavian backgrounds. The mediating role of ethnic identity is clearly notable in Fig. 2d: the differences in the probability of depressive symptoms between women with Iranian and Yugoslavian parents diminish if they feel committed to their parents' ethnic background.

Fig. 3 demonstrates a relationship between depressive symptoms and service class contacts for men (Fig. 3a and c), but not for women (Fig. 3b and d). An interaction between men with Swedish and Iranian parents is observable in Fig. 3a. The prediction lines show a modest increase in depression with access to service class contacts for men with Swedish-born parents, but a weak non-significant decrease for men of Iranian origin. This decrease is somewhat stronger for those with a non-Swedish identity (Fig. 3c).

Table 2
Average marginal effects from generalized estimating equations with robust standard errors for depressive symptoms in 19- and 23-year-old men and women.

	Men						Women					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	AME	SE	AME	SE	AME	SE	AME	SE	AME	SE	AME	SE
Age												
19 years	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
23 years	0.090**	(0.033)	0.110***	(0.033)	0.113**	(0.039)	-0.016	(0.037)	-0.005	(0.037)	-0.023	(0.031)
Parents' country of birth												
Iran	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
Yugoslavia	-0.161**	(0.059)	-0.180**	(0.061)	-0.163**	(0.058)	-0.349***	(0.073)	-0.380***	(0.077)	-0.323***	(0.075)
Sweden	-0.076	(0.064)	-0.100	(0.067)	-0.067	(0.063)	-0.299***	(0.079)	-0.337***	(0.084)	-0.294***	(0.080)
Ethnic identity												
Swedish	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
Other than Swedish	0.091	(0.056)	0.096	(0.056)	0.122*	(0.056)	-0.010	(0.064)	-0.009	(0.063)	0.020	(0.049)
Extensivity of manual class contacts			-0.021**	(0.007)	-0.017*	(0.007)			0.001	(0.009)	0.004	(0.007)
Extensivity of service class contacts			0.023	(0.016)	0.026	(0.016)			-0.021	(0.017)	-0.018	(0.013)
Accessible prestige scores			-0.023**	(0.008)	-0.023**	(0.007)			-0.001	(0.008)	0.004	(0.006)
School performance (grade points in deciles)					-0.018*	(0.008)					-0.039***	(0.007)
Employment status												
Studies only					Ref.						Ref.	
Works only					-0.195***	(0.044)					-0.125***	(0.040)
Studies and works					-0.130*	(0.055)					-0.072	(0.046)
Military service					-0.323**	(0.102)					-0.599***	(0.124)
Unemployed					0.258*	(0.106)					0.284*	(0.107)
Something else					0.052	(0.068)					0.054	(0.058)
Parents' occupation												
Low-skilled					Ref.						Ref.	
Semi-skilled					-0.022	(0.083)					0.124	(0.077)
Skilled, with shorter academic training					0.109	(0.092)					0.277**	(0.088)
Highly skilled, with longer academic training					0.094	(0.089)					0.223*	(0.084)
Parents' civil status												
Not married					Ref.						Ref.	
Married					-0.078	(0.041)					-0.133**	(0.037)
Number of respondents	1556						1522					
Number of observations	2236						2157					

Note: * $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$.

Table 3
Coefficients with robust standard errors from linear combinations of interactions.

	Men		Women	
	Coefficient	SE	Coefficient	SE
Extensivity of manual class contacts				
Sweden vs. Yugoslavia	0.01	(0.03)	0.02	(0.03)
Sweden vs. Iran	-0.02	(0.03)	0.07**	(0.03)
Iran vs. Yugoslavia	0.02	(0.03)	-0.05	(0.03)
Extensivity of service class contacts				
Sweden vs. Yugoslavia	-0.07	(0.04)	-0.01	(0.04)
Sweden vs. Iran	-0.13*	(0.05)	-0.01	(0.04)
Iran vs. Yugoslavia	0.06	(0.06)	0.01	(0.05)
Accessible prestige scores				
Sweden vs. Yugoslavia	-0.04	(0.02)	-0.03	(0.02)
Sweden vs. Iran	-0.07**	(0.02)	-0.04*	(0.02)
Iran vs. Yugoslavia	0.03	(0.03)	0.02	(0.02)
Number of respondents	1556		1522	
Number of observations	2236		2157	

Note: * $p < 0.05$; ** $p < 0.01$.

Fig. 4 shows notable differences in predicted depressive symptoms by prestige scores between respondents with Iranian parents and those with native Swedish and Yugoslavian parents. A relatively strong negative gradient is detected for those with Iranian parents. Again, a perceived non-Swedish identity appears to mediate the associations between depressive symptoms and

occupational contacts for those with an Iranian background (Fig. 4c and d).

4. Discussion

The study examined the frequency of depressive symptoms in young adults of Swedish, Yugoslavian and Iranian origin, and studied whether the access to occupational contacts explains intergroup variation in the occurrence of these complaints. The analysis of main effects revealed a significantly higher propensity for depressive symptoms in respondents of Iranian descent compared to respondents with native Swedish parents. Respondents of Yugoslavian origin disclosed the lowest risk of depression in the three samples under study. The findings contest earlier research on immigrants' children's higher vulnerability to mental ill-health (Sieberer et al., 2012), but are in line with studies finding interethnic variation in this disorder (Gilliver et al., 2014; Leão et al., 2005).

Subsequently performed interaction analyses accounted for the moderating effects of occupational social capital, and showed that the ethnic differences in depressive symptoms are dependent on respondents' access to specific occupational networks. Notable variations in the prevalence of depressive symptoms by occupational social capital were mainly detected for those with an Iranian background. Extensive access to manual occupations disclosed a marked increase in depression in women of Iranian descent,

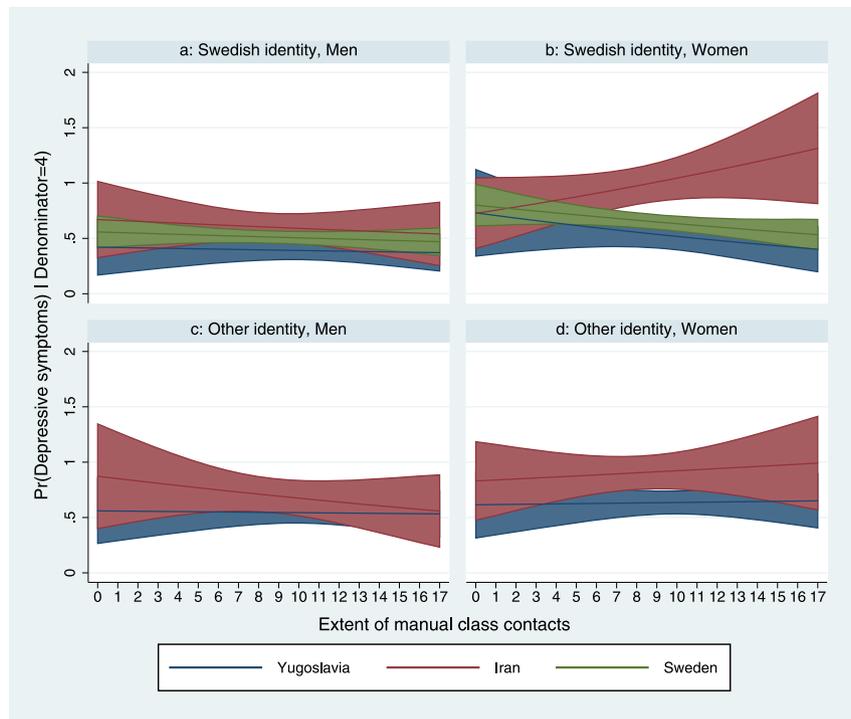


Fig. 2. Predicted probabilities of depressive symptoms with 95% confidence intervals by extensity of manual class contacts, ethnic background, and ethnic identity for men and women; n (obs.) = 4393.

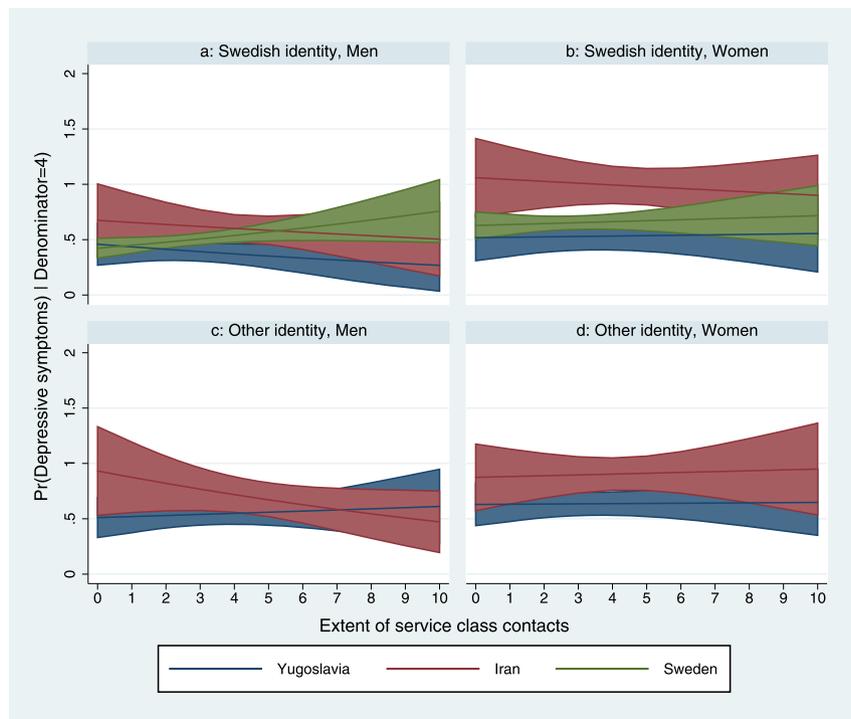


Fig. 3. Predicted probabilities of depressive symptoms with 95% confidence intervals by extensity of service class contacts, ethnic background, and ethnic identity for men and women; n (obs.) = 4393.

compared to women with native Swedish and Yugoslavian backgrounds. Whereas access to service class positions did not relate to depression, access to prestigious occupations mitigated the inter-group differences in depressive symptoms. Particularly the

complaints of respondents of Iranian descent decreased with higher prestige. Stratified analysis indicated that the associations between occupational social capital and depressive symptoms also depend on ethnic identity. Respondents who perceive themselves

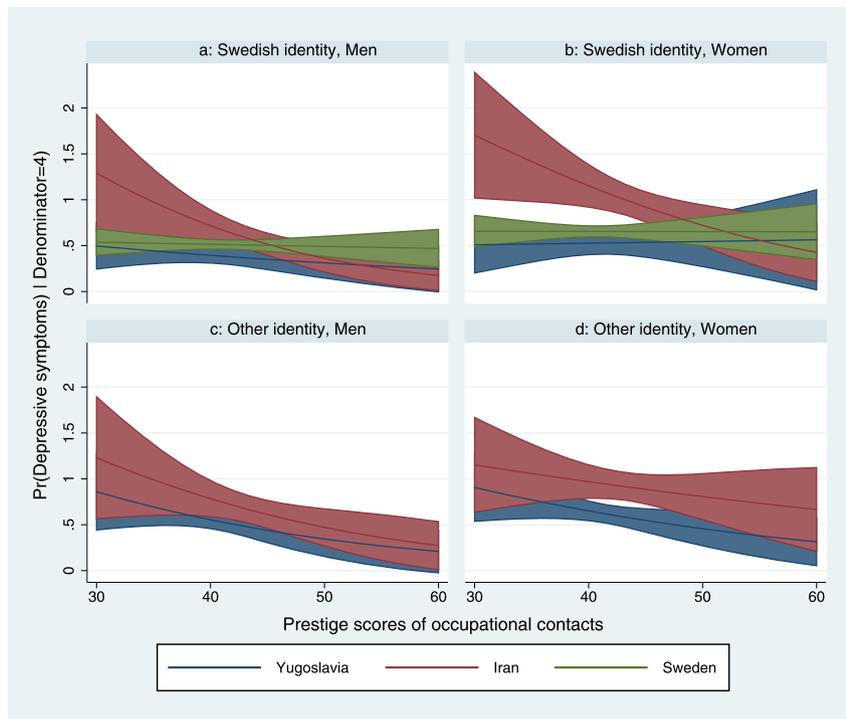


Fig. 4. Predicted probabilities of depressive symptoms with 95% confidence intervals by accessed prestige scores, ethnic background, and ethnic identity for men and women; (n (obs.) = 4393).

as Iranians revealed a relatively low propensity for depressive symptoms, even when they lack prestigious contacts.

The results and explanations presented so far do not entirely resolve why only respondents with an Iranian background disclose an elevated prevalence of depression: the strikingly similar associations between respondents with native Swedish parents and those with parents born in the former Yugoslavia indicate that a foreign background alone is insufficient for explaining the possible effects of occupational social capital. Alternatively, one could argue that the sociocultural distances between these two groups are smaller than between those with Swedish and Iranian parents. The presented findings nevertheless suggest interethnic differences in career aspirations and attitudes towards certain types of occupations. For example, the distinct associations identified for respondents with Iranian parents could reflect their aspirations for high-skilled positions and particular concerns about career development: higher education has a particular standing among Iranians in general, and is regarded as the essence of success and social advancement (Graham and Khosravi, 1997). Graham and Khosravi (1997) identified a reluctance to accept manual employment among Iranian immigrants, which stems from a fear of status loss in exile. Subsequently, access to upper occupational contacts may be perceived as encouraging and be associated with expected higher returns in regard to career success, income, and recognition by the majority population (Lin, 2000). Lacking access to prestigious occupational contacts among respondents with parents from Iran, in combination with high career aspirations, can be thought to elicit status anxiety, distress and frustration (Reynolds and Baird, 2010). Moreover, their vulnerability to latent or manifest discrimination likely reinforces these demoralizing experiences, and potentially contributes to a higher propensity for depression.

Educational achievements and occupational contacts are essential for entering the labor market. For people with a foreign background these credentials also increase sociocultural

competences, which in turn reduce the distance to the majority population (Heath et al., 2008). Striving for high achievements could also be a strategy for avoiding anticipated discrimination and stigmatization in the manual employment sector (Jonsson and Rudolphi, 2011). As a matter of fact, in Sweden persons with an Iranian background are overrepresented in tertiary education and high-skilled professions (Jackson et al., 2012; Jonsson and Rudolphi, 2011). Selective migration, but also distinct intergenerational processes that influence educational and occupational preferences, may explain why persons with an Iranian background excel (Smith et al., 2016). The first large wave of Iranian immigrants comprised primarily refugees who belonged to the academic middle class in Iran, which explains their relatively high educational attainment and career performance in the Swedish context. Despite their relatively high levels of education, Iranian immigrants faced difficulties integrating into the Swedish labor market, with particularly Iranian men struggling with unemployment and occupational mismatches (Kelly and Hedman, 2016). Given these circumstances, Iranians' aspiration level may thus be higher than their actual socioeconomic status suggests (Kao and Thompson, 2003). This incongruity between career ambitions and structural disadvantages seems to persist in children of Iranian immigrants (Kelly and Hedman, 2016). In line with this notion, the increase in depressive symptoms with manual and less prestigious occupational contacts in women with an Iranian background may emanate from distress and concerns about labor market opportunities, but could also reflect their aversion to lower positions in the occupational hierarchy. This seems to be the case particularly for descendants of Iranian immigrants who feel more strongly committed to the Swedish society. In the present study, it is mainly descendants of Iranians who came to Sweden in the 1980s who identify as Swedes. Their parents were also more likely to have experienced downward mobility when emigrating. Subsequently, they had higher ambitions that their children would advance socioeconomically. This

may have inflicted stress on the children of Iranian immigrants, which could explain their higher propensity for depression when their occupational contacts are limited. It is possible that persons with an Iranian background who perceive themselves as Swedish feel a stronger obligation to perform well in Swedish society. In contrast to those who regard themselves as Iranians, persons with an Iranian background and Swedish identity may to greater extent compare themselves with peers who belong to the majority population. An absence of Swedish identity in respondents with an Iranian background may reflect their lack of integration in Sweden. Therefore, their aspirations and ambitions may also be lower, which in turn could explain their indifference to the benefits of occupational social capital.

Finally, it is important to note that a majority of the respondents in the study sample are still in education and have not yet established themselves on the labor market. Hence, less a matter of tangible support and practical advice, the health implications of occupational social capital are likely fueled by future expectations. Lacking occupational social capital, especially in combination with sparse resources like low educational attainment, may thus cause distress and concern about career perspectives. Furthermore, possible reversed causation running from depression to social capital permits an alternative conclusion. Accordingly, Iranian parents in higher socioeconomic positions may facilitate their children's chances to establish strategically important occupational contact networks.

4.1. Limitations

The present study is subject to several limitations. The fairly low response rate may raise concerns regarding the generalizability and external validity of the findings. Non-response was due mainly to the limited reachability of respondents, but to a lesser extent refusal to participate. A sampling bias and overrepresentation of more advantaged respondents is nonetheless possible, but implies in turn that the presented results underestimate true associations. Although the reliability of the depression measure used has been proven, self-reported information is still prone to response bias. Sensitive health information, and particularly psychological complaints like depression, may thus be underestimated. Even if most respondents with non-Swedish background in this study grew up in Sweden, cross-cultural differences in the perception of depressive symptoms and a tendency to dysphoria in the Iranian culture may have contributed to the identified group-specific findings (Good et al., 1985). Panel attrition and new entries in the follow-up resulted in an unbalanced panel structure that does not entirely resolve concerns regarding reversed causation. The panel model used, however, somewhat accounts for the timely order of independent and dependent variables, and thus reduces influences from reversed associations and selection effects. A comparison of the results from the current unbalanced panel with those from a balanced panel did not show substantial differences. In favor of a larger sample size, the decision was made to retain the results from the unbalanced panel. Furthermore, temporally imprecise information about the occurrence and endurance of depressive moods does not disclose whether respondents were encountering the symptoms at the time of the interview or had done so in the past year. This potential time lag may raise concerns regarding causal inference and the direction of associations, as the onset of depressive symptoms may have preceded the formation of occupational contact networks. However, as the strong associations between parental occupational class and social capital variables indicate, the attainment of occupational network contacts is strongly influenced by an individual's socioeconomic background. Therefore, occupational social contacts are likely to be retained

when individuals encounter depression or health problems.

5. Conclusions

The present study approved the utility of occupational social capital for studying depressive symptoms in young adults with different ethnic backgrounds. Access to occupational networks was found to partially explain the ethnic variation in depressive symptoms, and showed marked associations for respondents with an Iranian background. Status concerns and aspirations for high-skilled occupations, in combination with minor sociocultural distance to the majority population, plausibly explain the increased prevalence of depressive symptoms in respondents with an Iranian background. To conclude, perceived ethnic identity and subsequent career ambitions and prospects, rather than ethnic characteristics alone, appear to determine the propensity for depression in young adults of Iranian descent. Access to prestigious occupational contacts is proposed to serve as a buffering mechanism that may reduce the ethnic differences in depression.

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