Labour market participation among young refugees in Sweden and the potential of education: a national cohort study

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ABSTRACT

This register-based study examined the importance of education on labour market participation among young refugees in Sweden. The study population consisted of unaccompanied (n = 1606) and accompanied refugees (n = 4142), aged 23–26 years in 2006–2010, after 7 years of residence in Sweden. Native Swedish, aged 24 years (n = 347,255) constituted the comparison population, with intercountry adoptees (n = 6689) as an alternative reference group. Gender-stratified multinomial regression models indicated that unaccompanied and accompanied male and female young refugees had higher risks of being in insecure work force and NEET compared to native Swedes with comparable levels of education. However, young refugees and intercountry adoptees with primary education had similar risks of poor labour market outcomes. The educational differences within each group concerning the risk of being in insecure work force were comparable. With the exception of unaccompanied females, secondary education seemed to be less protective against being in NEET among young refugees compared to native Swedes and intercountry adoptees. We conclude that while young refugees face employment disadvantages, education has the potential of mitigating poor labour market outcomes in this group.

ARTICLE HISTORY

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KEYWORDS

Young refugees; NEET (Neither education, employment, or training); labour market; education; intercountry adoptees

Introduction

The socioeconomic integration of migrants has become a top priority of Swedish migration policy (Wiesbrock 2011). Working life is crucial for integration; aside from being a source of income, it enables psychological wellbeing, social capital, and social inclusion (Bäckman and Franzén 2007; Bäckman et al. 2011; Lundborg 2013). A vast majority of young migrants nevertheless face difficulties when it comes to establishing themselves on the labour market. In turn, labour market problems tend to expose these individuals to a range of negative social and health consequences, including social exclusion, poor mental health, substance misuse, and criminality (Bloch 2002; De Jong, Komproe, and Van Ommeren 2003; Hjern 2004; Fazel, Wheeler, and Danesh 2005;
In the general population, education is perhaps the most important pathway to working life through its provision of skills and competences that foster employment (Björkenstam et al. 2011; Çelikaksoy and Wadensjö 2016). The role of education among individuals with a migrant background has however been disputed based on studies showing that their school-to-work transition and educational ‘payoff’ is poorer in relation to native individuals with a comparable level of education (Rachel M. Fried 2000; Bloch 2002; Chiswick and Miller 2008). Moreover, while there are studies reporting over-education in some migrant groups, the return appears to be lower (Lindley 2009; Joona, Gupta, and Wadensjö 2014) which suggests that different forms of barriers might play a role (Grand and Szulkin 2002; Nekby 2002; Behtoui 2004). Crossing the borders because of violence, conflict, or persecution, refugees constitute a particularly vulnerable group within the migrant population. This may be even more applicable to young refugees – either unaccompanied or accompanied by their parents. Yet, these young refugees have received relatively little attention by scholars in the field of migration and working life. Based on population-based register data, we aim to extend the knowledge about young refugees’ working life and, moreover, whether education has the same ‘payoff’ in terms of labour market outcomes as compared to native Swedes.

Integration of refugees

According to the UNHCR, the global number of refugees has increased substantially in the past two decades from about 15 million in 1995 to 23 million at the end of 2016, and the number of asylum seekers in the EU has also increased from about 500,000 to 2.5 million during the same period (UNHCR 2016a). Globally, children constituted about half of the asylum-seeker population in 2015. The proportion of unaccompanied minors, among all children who sought asylum in Europe, increased from about 10,000 in 2000 and reached about 98,000 in 2015 (UNHCR 2016b).

The number of asylum seekers to Europe has fluctuated significantly between countries and across time. During 2004–2011, for example, Sweden was the principal destination for asylum-seekers in the Nordic countries. Furthermore, Sweden was amongst the five major asylum-seeker receiving countries, along with Germany, United Kingdom, Austria, and France (UNHCR 2011). Globally, children and youth constitute about 30% of the asylum seekers. Among the unaccompanied minors who sought asylum in Europe, the major destination country in 2015 was Sweden, followed by Germany, Hungary and Austria. Together, these countries received about three-quarters of all asylum applicants of unaccompanied minors registered in the EU (Eurostat 2016). In Sweden, the number of unaccompanied children seeking asylum has increased rapidly in the last decade, reaching 35,000 in 2015. These have been primarily boys aged 15–17 years, coming from Somalia, Afghanistan, Iran, Syria, and Iraq (Migrationsverket 2016).

The Migrant Integration Policy Index (MIPEX), ranked Sweden as first out of 38 countries in terms of integration policies. The Swedish integration policy has been considered as being most effective in targeting the needs of the migrant population compared to any other country in Europe. In fact, all Swedish residents share equal rights to employment, education, and social benefits (Huddleston et al. 2015). Although its high MIPEX score, many groups among the migrant population in Sweden face multiple challenges. The
process of integration of children seeking asylum in Sweden has been complex, comprising inter-related economic, social, and cultural dimensions.

Children and youth for whom the asylum application is still in process may be placed with relatives, foster families and institution. These receive financial support during the asylum application process. However, the financial support system ends once a residence permit has been granted, similarly to when the child turns 18 years of age. Furthermore, young asylum seekers have the right to attend school and have fully access to the labour market. Health care is also provided, but only in case of emergency. However, in response to the huge increase in the number of asylum seekers in 2015, the Swedish government made drastic changes to its asylum policy. This involved the introduction of temporary residence permits, stricter conditions to the right to family reunification under the temporary act, and increasing border control, etc. Consequently, the number of asylum seekers decreased by over 82% in the following year (Parusel 2016).

**Education and working life among migrants**

The existing literature shows that the education that migrants and refugees bring from their home countries is generally less transferable in their host countries, than the schooling that they acquire after migration (Kanas and Van Tubergen 2009; Basilio and Bauer 2010; Girard 2010). For that reason, several studies have confirmed the benefits of the human capital acquired in the host countries on employment probabilities and earnings when compared to that of their countries of origin (Friedberg 2000; Bratsberg and Ragan 2002; Kanas and Van Tubergen 2009). However, gaps are likely to persist and vary by country of origin across the migrant population (Lamba 2003; Kalter and Kogan 2006; Bevelander and Pendakur 2014). There are also differences by gender, as female migrants are more likely to be more disadvantaged compared with their male counterparts (Semyonov and Gorodzeisky 2005; Bloch 2008). The disadvantages faced by women compared with their male counterparts have been explained by factors associated with motherhood and provision of childcare (OECD/EU 2015).

Comparative studies on school-to-work transitions across the EU and OECD countries have revealed that regardless of the educational attainment acquired in their host countries, migrants have poorer school-to-work transitions, compared with natives (OECD/EU 2015). These differences tend to be even more pronounced for the refugee population (Chiswick, Cohen, and Zach 1997; Colic-Peisker and Tilbury 2006; OECD/EU 2015). Refugees are particularly disadvantaged due to their mental and physical health vulnerability (De Vroome and Van Tubergen 2010; OECD/EU 2015) and lack of family support (Connor 2010). They are also more exposed to discrimination by employers (Kalter and Kogan 2006; Bevelander and Pendakur 2014).

**Youth unemployment and NEET (Not in Education, Employment, or Training)**

At the EU level, youth tend to experience more periods of unemployment compared to the adult population (Furlong and Cartmel 2006; Barham et al. 2009). Youth unemployment has turned into a major concern for the EU countries due to the high levels of disengagement of youth from the labour market. For example, the period from 2007 to 2011 saw an increase from 15.7% to 21.4%. Youth joblessness across the EU countries was more likely to
afect certain groups, such as those with a lower level of education. In fact, the proportion of youth unemployment among those with a primary level of education increased about 8% during the same period. Youth with a foreign background were also likely to face greater disadvantages than their native peers. Moreover, youth unemployment was in general higher among women immigrants than their male counterparts (Mascherini et al. 2012).

The International Labour Organization defines youth unemployment as a situation where young people aged 15–24, during a reference period, are without a job or self-employed; but available for work and currently seeking for job (ILO 2016). The use of this definition as an indicator of disengagement of youth in the labour market has been challenged by different scholars who argued that this concept fails in distinguishing between youth who are available for work but not able to find a job, from youth who are in education and have voluntarily decided not to look for a job or who are long-term sick or are engaged in different household responsibilities that might hinder them from being available for work. The concept of NEET – Not in Education, Employment, or Training – emerged in the UK in the 1990s and was used to describe the prevalence of youth aged 15 and 24 who were unemployed and inactive in education and training (Bynner and Parsons 2002; Dietrich 2013; Tamesberger and Bacher 2014).

Most European countries have used the concept of NEET as a central indicator for monitoring the labour market and social situation of young people aged between 15 and 24. The NEET rates across EU Member States have fluctuated significantly between countries and years. In fact, it has increased from the 10.8% in 2008 to 12.9% in 2011. The Netherlands and Luxemburg had the lowest rates of NEET less than 7%, while Bulgaria, Ireland, Italy and Spain have very high NEET rates greater than 17%. While the NEET rate in the year 2000 was 11.5% for men and 14.9% for women, this gender gap narrowed to 12.5% for men against 13.4% for women in 2011. On average, the NEET rate in EU was about three times higher among youth with lower educational level than those with tertiary level. Furthermore, the share of youth in NEET was higher among those with a migrant background (Mascherini et al. 2012; Eurofound 2016).

As mentioned above, the concept of NEET has been commonly used as an indicator to measure the size of socioeconomic vulnerabilities facing youth (Eurofound 2016; Commission 2011; Mascherini et al. 2012). However, this concept has been criticized by some scholars since it brings together under the same label different subgroups of youth, with different characteristics and needs (Furlong 2006; Yates and Payne 2006; Eurofound 2016). Recently, the Eurofound has considered that the heterogeneity of the NEET concept constituted an important problem for policymaking. Therefore, using the EU Labour Force Survey from 2016, the Eurofound has revised the concept and proposed a set of new subgroups for the NEET population, based on findings suggested by Eurofound in 2012. The current definition of NEET groups together a mix of vulnerable and non-vulnerable young people, each with their own characteristics and needs (Eurofound 2016).

In this study, we used an indicator of NEET status that is in line with the NEET concept proposed by the Eurofound (Eurofound 2016). This concept has previously been employed in several Swedish studies and has now been adapted to other Nordic countries (Bäckman et al. 2015; Bäckman and Nilsson 2016). This NEET categorization is primary based on
information on income sources and social benefits according to the level of employment attachment (Bäckman and Nilsson 2016). The description of the NEET indicator is further elaborated upon in the ‘Method’ section.

In line with the literature concerning school-to-work transitions, studies have demonstrated that young migrants are more likely than their native counterparts to be in NEET. This vulnerability is partially due to their lower level of education; accordingly, young migrants with a lower educational level are more likely to be NEET, compared to highly educated young migrants. The over-representation of migrants among the poorly educated has been explained by their higher rate of school dropout and less involvement in employment-oriented training programmes (OECD/EU 2015). In this study, we assume that these patterns apply also to young refugees.

It is hypothesized in the current study that educational achievement does not automatically lead to labour market success to the same extent among young migrants and refugees as compared to their majority population peers. A key factor here may be the mechanism of discrimination in limiting employment chances among refugees and migrants, irrespective of their level of education. Young refugees and particularity unaccompanied young refugees might also face additional disadvantages regarding labour market success: following Granovetter’s work (1973) regarding the importance of social ties for job search, we expect this group to have limited social ties that are needed to obtain information about job opportunities. Apart from the multiple traumatic experiences, they have experienced in their country of origin (Bean et al. 2007; Derluyn, Mels, and Broekaert 2009), unaccompanied minors might be more vulnerable than accompanied ones as they might face dual experiences of psychological and acculturative stress distress, and lack of social and emotional support from their families.

The current study uses intercountry adoptees as an alternative reference group. Young refugees and intercountry adoptees might share some similar risk factors for poor social adjustment. For example, it is common for both groups to have experienced adversity in the country of origin, and they may also share some physical characteristics that differ from that of the majority Swedish population (Manhica et al. 2016). However, since intercountry adoptees are raised by parents from the majority population, often with considerable material and educational resources (Hjern 2012), they are more likely to have a higher level of education and wider social networks – which would increase employment opportunities. Young refugees on the other hand, and specially unaccompanied minors who lack family support have limited social networks and share cumulative health problems (Hjern, Lindblad, and Vinnerljung 2002), might be more disadvantaged compared with intercountry adoptees.

In sum, the current study focuses on refugees who came to Sweden unaccompanied or accompanied when they were teenagers and their subsequent labour market participation. We examine these individuals’ risk of being in insecure work force and NEET compared to native Swedes and intercountry adoptees. Moreover, educational differences in these risks within each of the four groups (natives Swedes, unaccompanied young refugees, accompanied refugees, and intercountry adoptees) are investigated. Special attention is paid to differences between men and women through gender-stratified analysis.
Methods

Sweden has a long tradition of maintaining national registers that provide high-quality data on socioeconomic indicators. These are protected by special legislation, which makes it possible to collect certain information without the personal consent of individuals (Rosén 2002). The different registers can be linked to each other using the unique personal identification number that follows Swedish residents from birth or immigration to death. We linked immigration and socio-demographic information from registers held by Statistics Sweden and the Swedish Migration Agency.

This study was approved by the Regional Ethics Committee in Stockholm before any records were linked (decision no. 2013/811-31/5). All the data used were anonymous and the researchers did not have access to any personal information that could identify individuals included in the dataset. Data sharing is not applicable to this article. According to the Swedish data protection law, administrative data is made available for specific research projects. Therefore, we cannot share data that support the findings of this study with other researchers. We, however, are happy to answer any questions about the data set and to share unpublished results.

Study population

In total, the study population comprises young unaccompanied and accompanied refugees, intercountry adoptees and native Swedes who were born between 1979 and 1986 and who were alive and resident in Sweden on December 2012, according to the Register of the Total Population (RTP). This register contains information on country of origin, date of birth, gender, date of immigration, and residency in Sweden.

Categorization

The refugee population was defined as everyone who were granted residence permits in Sweden on humanitarian grounds; according to STATIV – a longitudinal database for integration studies, which is held by Statistics Sweden and based on data from the Swedish Migration Agency. This database includes information regarding the reason of immigration and country of origin. For the purpose of the current study, the refugee population consists of individuals who immigrated to Sweden between 1998 and 2002 and were between the ages of 16 and 19 when they received permanent residency in Sweden as refugees or because they were related to a refugee. However, young refugees who immigrated at the age of 19 for a family reunification with a refugee were not included in this study. This is because we presume that they might have immigrated to Sweden to marry another refugee. This study moreover excludes individuals who emigrated or died at any time during the study period.

We categorized the refugee population into accompanied refugees, if they (according to STATIV) had obtained residency because they were related to a family member who was a refugee, or if they had at least one parent in the Multi-Generation Register (contains parental identification numbers and through this register children and parents can be linked) who had received residency in Sweden the same year or before the young refugee. Young refugees who arrived alone without the company of at least one parent were categorised as unaccompanied refugees.
The population of *intercountry adoptees* comprised all individuals who were born outside the Europe and other Western countries, who were adopted under the age of 8 years (this is the most common age profile among adopted children in Sweden), and had at least one Swedish-born adoptive parent according to the Multi-Generation register. Native Swedes born with two Swedish-born parents constituted the comparison population.

**Educational attainment**

The measure of educational attainment was based on the highest attained education, according to the Swedish Register of Education, and included in the Statistics Sweden’s Longitudinal Integration Database for Health Insurance and Labour Market Studies (LISA by Swedish acronym). LISA contains information regarding age, calendar year, sex, disposable income, education, domicile, social assistance, labour market attachment, and parental leave. This was categorized into (i) primary: if individuals had missing education, nine or less years of education. (ii) Secondary: if individual had more than 10 years of education and post-secondary education.

The level of education of the refugee population was measured 7 years after immigration, i.e. when the refugee population were between 23 and 26 years old. For native Swedes and intercountry adoptees, level of education was measured at age 24, as this was the mean age of the refugee population after 7 years of residency in Sweden.

**Labour market participation**

The outcome variable was defined based on a model designed for the purpose of measuring labour market participation that has previously been used in several Swedish studies (Nilsson). This model is based on income sources using information from the LISA database and categorizes the study population according to degree of labour market participation (Bäckman and Nilsson 2016). The outcome variable was based on information for three consecutive years in order to make the categories less heterogeneous, by excluding those who are only temporarily outside the education system and the labour market. Labour market participation was measured for the three years following the year when information on educational attainment was retrieved, i.e. for the Swedish-born population and the adoptees at age 25–27 and for the refugee population after 8–10 years in Sweden. Four categories of labour market participation were created, as defined below.

**Core work force**

All individuals who can support themselves by means of labour market income, which in addition to wages and entrepreneurial incomes include incomes from social insurance that are linked to employment such as payments from the parental insurance system and sickness allowance. It does, however, not included income sources such as unemployment benefits, student allowances or disability pensions. The core work force includes all individuals having an annual labour market income of at least 3.5 price base amounts (PBA) for at least two of the three years. The PBA is used by the Swedish government to calculate benefits in social insurance programmes and it is calculated based on changes in the general price level, in accordance with the National Insurance Act. This
income limit was chosen since it approximates the gross income from a full-time employment in one of the lowest paying jobs in Sweden (Bäckman and Nilsson 2016).

**Education**

All individuals who during the third of the three consecutive years received student allowances and had annual earnings less than 3.5 PBA (regardless of income during the first two years).

**Insecure work force**

Individuals with some labour market income during the three years, but with a lower attachment to the labour market; labour market income of at least 3.5 PBA for no more than one year and less than 0.5 for no more than two years. Individuals receiving unemployment insurance for at least two of the three years are also included in this category.

**NEET**

All individuals with long-term sick leave/early retirement who have received disability pension during at least one of the three years and individuals with income from sickness benefits constituting at least 25% of annual earnings for at least two of the three years. This category also includes individuals with annual earnings of less than 0.5 PBA during at least two of the three years who do not fit into any of the above categories.

**Statistical analysis**

A description of the study population according to gender, municipality of residence, country/region of origin (Former Yugoslavia, the Horn of Africa, Iraq, Iran, and Other non-European countries), and educational attainment is presented in Table 1. In Table 2, we further describe the distribution of the different categories of labour market participation by level of education, stratified by gender.

| Table 1. Socio-demographic indicators of the study population (n = 3,59,983). |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
|                                 | Native Swedes n = 3,47,255 | Unaccompanied young refugees n = 1,606 | Accompanied young refugees n = 4,142 | Intercountry adoptees n = 6,689 |
| Gender                         | %                | %                | %                | %                |
| Male                           | 51.6             | 52.1             | 53.9             | 46.8             |
| Female                         | 48.4             | 47.9             | 46.1             | 53.2             |
| Domicile                       |                  |                  |                  |                  |
| Big city                       | 40.1             | 59.2             | 56.2             | 44.0             |
| Town                           | 52.4             | 38.8             | 41.6             | 50.4             |
| Rural                          | 7.5              | 2.0              | 2.2              | 5.6              |
| Country of origin              |                  |                  |                  |                  |
| Former                         |                  |                  |                  |                  |
| Yugoslavia                     | 14.8             | 17.1             | 17.1             |                  |
| Horn of Africa                 | 12.1             | 5.6              |                  |                  |
| Iraq                           | 38.3             | 41.6             |                  |                  |
| Iran                           | 3.9              | 5.6              |                  |                  |
| Other                          | 30.9             | 30.1             |                  |                  |
| Educational attainment         |                  |                  |                  |                  |
| Primary                        | 9.9              | 52.7             | 39.5             | 14.5             |
| Secondary                      | 90.1             | 47.3             | 60.5             | 85.5             |
**Table 2.** Differences in labour market participation by level of education among male native Swedes, unaccompanied and accompanied young refugees, and intercountry adoptees ($n = 1,857,06$). Results from multinomial regression analysis presented as relative risk ratios (RRRs) with 95% confidence intervals (CIs).

<table>
<thead>
<tr>
<th>Core work force (Base outcome, RRR = 1)</th>
<th>Native Swedes</th>
<th>Unaccompanied young refugees</th>
<th>Accompanied young refugees</th>
<th>Intercountry adoptees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RRR (95% CI)</td>
<td>RRR (95% CI)</td>
<td>RRR (95% CI)</td>
<td>RRR (95% CI)</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (ref).</td>
<td>1</td>
<td>1.61 (1.51–1.72)</td>
<td>1.15 (0.71–1.85)</td>
<td>2.97 (2.16–4.01)</td>
</tr>
<tr>
<td>Insecure work force</td>
<td>1</td>
<td>0.63 (0.60–0.66)</td>
<td>2.06 (1.61–2.63)</td>
<td>1.34 (1.02–1.75)</td>
</tr>
<tr>
<td>NEET (ref).</td>
<td>1</td>
<td>0.14 (0.13–0.14)</td>
<td>1.60 (1.26–2.05)</td>
<td>0.49 (0.35–0.69)</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (ref).</td>
<td>1</td>
<td>1.61 (1.50–1.72)</td>
<td>2.59 (1.49–4.48)</td>
<td>1.23 (1.59–3.11)</td>
</tr>
<tr>
<td>Insecure work force</td>
<td>1</td>
<td>0.63 (0.60–0.66)</td>
<td>0.65 (0.47–0.91)</td>
<td>0.66 (0.53–0.82)</td>
</tr>
<tr>
<td>NEET (ref).</td>
<td>1</td>
<td>0.14 (0.14–0.15)</td>
<td>0.31 (0.21–0.46)</td>
<td>0.38 (0.30–0.48)</td>
</tr>
</tbody>
</table>

Notes: Models are adjusted for age, calendar year and domicile. Part A: Reference group is Native Swedes with primary education. Part B: Reference group alternates between groups with primary education (but kept in the same model).
We applied multinomial regression analysis to examine whether there were differences between native Swedes, unaccompanied young refugees, accompanied young refugees, and intercountry refugees regarding the risks of being in education, insecure work force, and NEET, compared to being in the core work force. This analysis was performed in two steps. In the first step (A), the native Swedes with primary education constituted the reference category. It should, however, be noted that when alternative comparisons (using other reference groups than native Swedes with primary education) are being mentioned in the results section, as based on the confidence intervals in the table and their overlap/non-overlap, the statistical significance have been double-checked in additional analyses. For the second step (B), the reference category alternated between the four groups with primary education: e.g. accompanied young refugees with secondary education were compared with accompanied young refugees with primary education. However, although not shown in the table, all groups were kept in the same model. All analyses were stratified by gender and adjusted for age, domicile and calendar year.

**Results**

Table 1 shows the distribution of gender, domicile, country/region of origin, and educational attainment within the groups of native Swedes, unaccompanied young refugees, accompanied young refugees, and intercountry adoptees. The results indicate, for example, that a majority of the refugee population was male, while the opposite was true among intercountry adoptees. The young refugees were more likely to live in big cities, namely the metropolitan areas of Sweden’s three largest cities: Stockholm, Gothenburg and Malmo. The largest group of young refugees was from Iraq, followed by ‘Other’ countries, and Former Yugoslavia. The distribution of educational attainment showed that 90.1% of native Swedes and 85.5% of intercountry adoptees had secondary education. The corresponding figures among unaccompanied and accompanied young refugees were 47.3% and 60.5%, respectively.

Table A (see Supplementary Table A) presents the gender-stratified distribution of the categories of labour market participation across native Swedes, unaccompanied and unaccompanied young refugees, and intercountry adoptees, educational attainment. The percentage of native Swedes with primary education who are in the core work force is comparable with the figures for young refugees with secondary education. Another observation is that the prevalence of insecure work force does not differ to any large extent between unaccompanied and accompanied young refugees whereas being NEET is more common among unaccompanied and accompanied young refugees whereas being NEET is more common among unaccompanied young refugees.

Table 2 reports on the relative risk (assessed by multinomial regression) of the risk of being in education, insecure work force, and NEET, using core workforce as the reference outcome, among males. The upper part of table (A) shows that native Swedes with secondary education have a lower risk (RRR = 0.61) compared to native Swedes with primary education, to be in insecure work force. The opposite applies to almost all other groups: unaccompanied (primary: RRR = 2.06, secondary: RRR = 1.34) and accompanied (primary: RRR = 1.97, secondary: 1.29) young refugees, regardless of educational attainment, as well as intercountry adoptees with primary education (RRR = 1.98) have increased risks. Concerning NEET, young refugees with primary education show higher risk ratios (unaccompanied: RRR = 1.60, accompanied: RRR = 1.17) compared
to native Swedes. Interestingly, their risks are significantly exceeded by intercountry adoptees with primary education (RRR = 2.09). For all groups with secondary education, the risk ratios are considerably lower compared to native Swedes with primary education (native: RRR = 0.14, unaccompanied: RRR = 0.49, accompanied: RRR = 0.44, adoptees: RRR = 0.27).

Regarding Part B of Table 2, it is evident that the differences between those with primary and secondary education in the risk of insecure work force, are of equal size within all four groups (native: RRR = 0.61, unaccompanied: RRR = 0.65, accompanied: RRR = 0.66, adoptees: RRR = 0.54). For the risk of being in NEET, however, native Swedes (RRR = 0.14) and intercountry adoptees (RRR = 0.13) seem to be better protected by secondary education, compared to the young refugees (unaccompanied: RRR = 0.31, accompanied: RRR = 0.38).

The corresponding results for females are shown in Table 3. Regarding the upper part (A), native Swedes (RRR = 0.47) and intercountry adoptees (RRR = 0.66) with secondary education are less likely to be in insecure work force, compared to native Swedes with primary education. In contrast to the findings for males, being in insecure work force is not significantly more common among young female refugees although the risk ratios still exceed 1 (unaccompanied: RRR = 1.06, accompanied: RRR = 1.10). Regarding the groups with primary education, unaccompanied (RRR = 2.28) and accompanied (RRR = 1.96) young refugees, as well as intercountry adoptees (RRR = 1.76), have increased risks of the similar magnitude to be in insecure work force. The risk of being in NEET is very low among native Swedes with secondary education (RRR = 0.08) as compared to native Swedes with primary education. The corresponding risk ratios for the other groups with secondary education are at a comparably higher level (unaccompanied: RRR = 0.41, accompanied: RRR = 0.55, adoptees: RRR = 0.17). Furthermore, in comparison to native Swedes with primary education, the other three groups with the same level of education do not show any significant difference between them concerning the risk ratios (unaccompanied: RRR = 3.31, accompanied: RRR = 2.38, adoptees: RRR = 2.48).

In the lower part of Table 3 (B), the same results as for males are shown for females: the educational gap in the risk of insecure work force, are not significantly different across the four groups (native: RRR = 0.48, unaccompanied: RRR = 0.47, accompanied: RRR = 0.57, adoptees: RRR = 0.37). Concerning the risk of being in NEET, only accompanied young refugees stand out as having a slightly smaller gap between those with primary and those with secondary education (RRR = 0.22).

**Discussion**

This register-based study of education and labour market participation among young refugees who settled in Sweden as teenagers indicates that unaccompanied and accompanied male and female young refugees have higher risks of being in insecure work force and NEET compared to native Swedes with comparable levels of education. However, young refugees’ risk of poor labour market outcomes is in some instances similar to that of intercountry adoptees. The educational differences within each group concerning the risk of being in insecure work force were of the same magnitude. With the exception of unaccompanied females, secondary education seemed to be less protective against being in NEET among young refugees compared to native Swedes and intercountry adoptees.
Table 3. Differences in labor market participation by level of education among female native Swedes, unaccompanied and accompanied young refugees, and intercountry adoptees (n = 1,74,277). Results from multinomial regression analysis presented as relative risk ratios (RRRs) with 95% confidence intervals (CIs).

<table>
<thead>
<tr>
<th></th>
<th>Native Swedes</th>
<th>Unaccompanied young refugees</th>
<th>Accompanied young refugees</th>
<th>Intercountry adoptees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core work force (Base outcome, RRR = 1)</td>
<td>RRR (95% CI)</td>
<td>RRR (95% CI)</td>
<td>RRR (95% CI)</td>
<td>RRR (95% CI)</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Primary (ref.)</td>
<td>Secondary</td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.74 (0.70–0.79)</td>
<td>4.19 (2.93–6.00)</td>
<td>1.92 (1.43–2.57)</td>
</tr>
<tr>
<td>Insecure work force</td>
<td>1</td>
<td>0.47 (0.45–0.49)</td>
<td>2.28 (1.60–3.26)</td>
<td>1.06 (0.79–1.42)</td>
</tr>
<tr>
<td>NEET</td>
<td>1</td>
<td>0.08 (0.08–0.09)</td>
<td>3.31 (2.39–4.57)</td>
<td>0.41 (0.29–0.57)</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Primary (ref.)</td>
<td>Secondary</td>
<td>Primary (ref.)</td>
<td>Secondary</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.74 (0.70–0.78)</td>
<td>1</td>
<td>0.47 (0.30–0.72)</td>
</tr>
<tr>
<td>Insecure work force</td>
<td>1</td>
<td>0.48 (0.45–0.49)</td>
<td>1</td>
<td>0.47 (0.30–0.71)</td>
</tr>
<tr>
<td>NEET</td>
<td>1</td>
<td>0.08 (0.08–0.09)</td>
<td>1</td>
<td>0.12 (0.08–0.20)</td>
</tr>
</tbody>
</table>

Notes: Models are adjusted for age, calendar year and domicile. Part A: Reference group is Native Swedes with primary education. Part B: Reference group alternates between groups with primary education (but kept in the same model).
The reduced social networks among young refugees could provide a partial explanation to the finding that young refugees have increased risks of being in insecure workforce and NEET, rather than being in the core work force. This interpretation is in line with Granovetter’s postulation regarding the importance of social ties in job search (Granovetter 1973). Accordingly, social networks are important sources of information about job opportunities, and so by connecting with a greater number of social networks, through ‘weak social ties’ – social interaction between people from distant social structures, young refugees may gain access to employment opportunities. Weak social ties may be essential for job search but strong social ties, such as relationships with relatives and close friends, matter too (Cheung and Phillimore 2014). A study conducted in the UK, for example, has shown that young refugees were more likely to find jobs through informal networks rather than other formal methods (Bloch 2002). However, while the current study distinguished the group of unaccompanied young refugees, with the expectation that they would have even more limited social networks and thus have higher risks of poor labour market outcomes, we did not find them to be significantly different from those migrating together with their parents.

The importance of post-migration investments in human capital – measured in terms of educational attainment – on employment and its correlated outcomes, have been reported and discussed in previous studies conducted in Sweden and elsewhere (Tansel 1994; Bratsberg and Ragan 2002; De Vroome and Van Tubergen 2010; Lundborg 2013). Yet, the role played by educational achievement in working life have been challenged by several findings that reported its low or partial importance in explaining the existing gaps in employment between migrants and natives with comparable levels of human capital measured in terms of level of education (Duvander 2001), suggesting that additional barriers to labour market participation are at play. The findings in the current study can at first glance be seen as mixed with regard to the potential of education. On the one hand, the educational differences in the risk of being in insecure work force were of similar size across all groups, thus suggesting that education is an equally powerful buffer among young refugees. On the other hand, obtaining a secondary education seemed to protect less against being in NEET among young refugees. It should nevertheless be underscored that the above reasoning is based on comparisons with the group of native Swedes: focusing only on young refugees, it stands strikingly clear that the risks of either type of poor labour market outcomes are heavily reduced among those with secondary education.

Interestingly, the results of the current study indicated that young intercountry adoptees did not always have the same level of labour market participation when compared with native Swedes. This is surprising as intercountry adoptees are raised by parents from the majority population, often with considerable material and social resources (Hjern 2012). Intercountry adoptees usually have a Swedish sounding names, they speak Swedish fluently, and have broad social networks that are comparable with those of native Swedes (Rydgren 2004). The relatively poor labour market outcomes reported in this group, similar to those for young refugees, may suggest that both young refugees and intercountry adoptees face ethnic discrimination in the Swedish labour market. This goes in line with recent studies conducted in Europe that have reported poor employment outcomes and high likelihoods of being in NEET among people with migrant background when compared with the native population (OECD/EU 2015). The poor psychological
health conditions reported in both young intercountry adoptees (Hjern, Lindblad, and Vinnerljung 2002; Tieman, van der Ende, and Verhulst 2005) and refugee population (Fazel, Wheeler, and Danesh 2005; Montgomery 2011) could, in part, explain their comparable labour market disadvantages. Intercountry adoptees might share some risk factors of mental health that are related to their origin, in terms of exposure to, e.g. poverty, as well as genetic features and physically appearance (Hjern 2012).

Regarding gender differences, this study, first of all, shows that the distribution of labour market participation is rather different between males and females. For example, males had higher percentages of participation in the core work force whereas females – particularly those with primary education – were more likely to be in NEET. The gender gaps in NEET could partly be explained by the age composition of the NEET population, as young non-working mothers might be in this group. Findings that more young females compared to males end up in NEET also in their later adulthood have recently been reported across the EU member states (OECD/EU 2015). Because the current study did not distinguish females who were on parental leave from other females, this could have influenced the measurement of NEET in this specific group. Despite the differences in the distribution of labour market participation, the patterns of associations were rather similar between males and females. An interesting exception was the case of unaccompanied females for whom secondary education seemed to be as protective against being NEET as for the native Swedes. Lack of family member might motivate unaccompanied refugee women to involve in education and working life. This is in line with results that suggested that refugee women who live close to their relatives and family members might be involved in family care responsibilities that could hinder their participation in the labour market (Lamba 2003).

**Strengths and limitations**

The major strength of this longitudinal study was that it was based on national data, derived from a combination of different national registers covering the entire population living in Sweden. The dataset allowed us to identify intercountry adoptees and the refugee population living in Sweden as a result of the Geneva Convention, together with refugees granted residence permits on humanitarian grounds. Furthermore, we were able to define different categories of labour market participation as the registers provide annual information regarding all sources of income available in Sweden.

This study used a categorization of NEET that is similar to the NEET categorization revised by the Eurostat in 2016 (Eurofound 2016). Furthermore, we used an indicator of NEET status that has previously been employed in several Swedish studies but which has now been adapted to across the Nordic countries (Bäckman and Nilsson 2016). This NEET indicator is primary based on information on income sources and social benefits according to their level of employment attachment. Furthermore, while the NEET indicator employed by the Eurostat in 2016 was measured using data from the Labour Force Survey (LFS) and used a short reference period of time, the indicator of NEET used in this study and in other Swedish studies (Bäckman and Nilsson 2016; Bäckman et al. 2015) covers a longer reference period of time (three consecutive years) in order to capture those who experience long-term disadvantages in terms of education and labour market. The use of a longer reference period is, therefore, an important strength of this study. This provides
more robustness and a smaller share of NEET youth than the one based on the Labour Force Survey (Bäckman and Nilsson 2016).

Some limitations should also be highlighted. First, in these analyses information on the general health status of the individuals are not included. This would potentially be an important contributing factor in explaining reasons for poorer labour market outcomes and should be further explored in future studies. Second, we attempted to make the measure of education as comparable as possible across unaccompanied/accompanied refugees and native Swedes/intercountry adoptees by using the former groups’ educational attainment 7 years after immigration and the latter groups’ educational attainment at age 24 (the mean age of the young refugees after 7 years of residency). Still, however, the same level of education is likely to be qualitatively different between these groups: the fact that only 10–15% of native Swedes and intercountry adoptees still have primary education at that age could reflect a situation characterised by extensive socioeconomic or health-related adversity. It is likely that such problems are prevalent also among the 40–52% of young refugees that have only primary education but these groups are probably much more diverse. It is suggested that future studies explore this further by simultaneously contrasting the qualitative and quantitative aspects of education and their relation to labour market participation among young refugees. Fourth, because of the small population sizes for specific countries of origin, it was not possible to draw any solid conclusions regarding country differences in labour market participation. Fifth, essential data on possible confounders, such as, educational level brought from their home countries, cultural values, social support, experiencing of discrimination, that could account for the different patterns in the outcome variable were not available in our data. Sixth, the division of the educational level is very broad, this should be considered when interpreting the results. Seventh, due to the limited size of the refugee population, it was not possible to examine whether refugees were more affected by the crisis compared to the rest of the population. Therefore, it was not possible to draw conclusions about the importance of calendar years in labour force participation and NEET.

Conclusions

The current study shows that young refugees have much higher risks of poor labour market outcomes compared to native Swedes. The similar patterns were found for both males and females as well as for unaccompanied and accompanied young refugees alike. However, the risks of poor labour market outcomes among young refugees are in some instances comparable to those of intercountry adoptees, suggesting that barriers related to ethnic discrimination on the labour market may also be at play. Obtaining a secondary education is protective against poor labour market outcomes among all groups – even if the reduction among young refugees in the risk of being in NEET is not as large as for native Sweden. This underscores the potential of education in increasing labour market participation among young refugees and thereby improving their socioeconomic integration in society.

Disclosure statement

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