Explaining health and healthcare utilisation of ethnic minorities in the Netherlands: A longitudinal perspective

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Citation for published version (APA):

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Health changes of refugees from Afghanistan, Iran and Somalia: the role of residence status and experienced living difficulties in the resettlement process

This chapter has been submitted as:
Lamkaddem M, Essink-Bot ML, Devillé WD, Gerritsen AAM, Stronks K. Health changes of refugees from Afghanistan, Iran and Somalia: the role of residence status and experienced living difficulties in the resettlement process.
Abstract

Introduction
Worldwide, refugees show a poorer mental and physical health than the populations among which they resettle. Little is known about the factors influencing health after resettlement. We examined the development of mental and physical health of refugees. As experienced living difficulties might decrease with obtaining a residence permit, we expected this to play a central role in health improvement after resettlement.

Methods
A two-wave study conducted in the Netherlands among a cohort of 172 ‘new’ (n=68) and longstanding (n=104) permit holders from Afghanistan, Iran and Somalia between 2003 and 2011. Multivariate mediation analyses were conducted for the effect of changes in living difficulties on the association between change in status and changes in health. Health outcomes were self-reported general health, number of chronic conditions, PTSD and anxiety/depression.

Results
‘New’ permit holders had larger decreases in PTSD score (-0.402, CI:-0.612; -0.192) and anxiety/depression score (-0.298, CI: -0.464; -0.132), and larger improvements in self-rated general health between T1 and T2 (0.566, CI: 0.183; 0.949) than longstanding permit holders. This association was not significant for changes in number of chronic conditions. Mediation analyses showed that the effect of getting a residence permit on health improvements transited through an improvement in living conditions, in particular employment and the presence of family/social support.

Conclusion
These results suggest that change in residence permit is beneficial for health mainly because of the change in living difficulties. These results add up to the evidence on the role of social circumstances for refugees upon resettlement, and point at labour participation and social support as key mechanisms for health improvements.

Explaining health and healthcare utilisation of ethnic minorities
Introduction

Across the globe, refugees show in general a poorer mental and physical health than the local populations amongst which they settle. In countries at war, or experiencing many years of political instability and economical deprivation, the performance and coverage of health care is generally low, and living conditions also seriously deteriorate, forcing migration and damaging health. This reflects in refugee populations through (among others) higher incidences of communicable diseases, bad oral health, musculoskeletal diseases and low mental health, with high prevalence of common mental disorders (CMD) and post-traumatic stress disorder (PTSD) (1-5).

The circumstances in which refugees find themselves in the first period following the flight might also contribute to the generally poor health state. Uncertainty linked to their future situation after the asylum procedure might be stressful and therefore have negative effects on physical (6) and mental (7) health of asylum seekers. Therefore, upon resettlement, and after obtaining a residence permit in a wealthier and economically and politically more stable country, health improvements over time are expected (3, 7-9). Upon getting a residence permit, the living conditions of refugees change drastically, especially concerning the housing situation and access to paid work (for more information, see the European Reintegration Support Organisations project (http://www.erso-project.eu/)). However, it remains unclear which factors precisely contribute to health improvements of refugees around resettlement. Is the certainty about the future in the host country, (6,7) or the improvement in living conditions (10) the key factor in the health improvements before and after getting a residence permit?

Following the findings of Nickerson (11), it is our hypothesis that, upon getting a permit, changes in living conditions, and therefore in experienced living difficulties, greatly contribute to health improvements. We tested this hypothesis by comparing retrospectively health changes of new and longstanding permit holders. We compared those two groups because one group (new refugees) theoretically experienced more changes in residence status and living conditions than the other group (longstanding refugees) within the study period. We could therefore statistically examine the effect
The present paper addresses three questions: first, how do several mental and physical health indicators of new and longstanding permit holders develop over time? Second, is there an association between mental and physical health changes and change in residence status? Finally, is this association mediated by changes in experienced living difficulties?

We address these questions within a two-wave study conducted between 2003 and 2011 in the Netherlands among a cohort of new and longstanding permit holders from Afghanistan, Iran and Somalia (for the study design of the first wave see (12)). New permit holders are those participants of the second wave who were applying for asylum during the first wave, and therefore changed status between both measurements. Longstanding permit holders are those participants of the second wave who already had a residence permit during the first wave of the study. All respondents included in the 2011 assessment had obtained a permit.

**Methods**

**Study population**

In 2003-2004, a sample of 410 refugees from Iran, Afghanistan and Somalia with and without a residence permit (respectively 178 asylum seekers and 232 permit holders) was interviewed for the baseline measurement (T1). A more detailed description of the initial study population and measurements can be found elsewhere (12).

In 2010-2011, respondents were invited by mail to participate in the second wave (T2). Of the 410 T1 participants, 128 were found to have no known address in the Netherlands, because they were not granted asylum (n= 65) or we could not find a valid address (n=59) or that they deceased (n=4). This left us with a sample of 282 refugees, most of whom were granted a residence permit since the first wave (figure 5.1). Of those 282 refugees, 172 were interviewed for a follow-up (response = 61%, retention rate= 42%). Those who did not respond (n=110) could mostly not be reached (43% of non-response) or refused to participate (30% of non-response). For
both T1 and T2, questionnaire-based face-to-face interviews were conducted in the language of choice of the participants (Dutch, Dari, Pashto, Farsi or Somali). Interviewers and respondents were matched on gender and ethnic background. (Translated) informed consent was obtained from all respondents.

**Figure 5.1 Data collection chart**

<table>
<thead>
<tr>
<th>Respondents (T1) (2003-2004)</th>
<th>Update contact</th>
<th>Outcome interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>178 PH</td>
<td>142 valid address</td>
<td>104 interview</td>
</tr>
<tr>
<td></td>
<td>36 no valid address</td>
<td>36 no interview</td>
</tr>
<tr>
<td>232 asylum seekers</td>
<td>140 valid address</td>
<td>68 interview</td>
</tr>
<tr>
<td></td>
<td>92 no valid address</td>
<td>92 no interview</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Respondents (T2) (2010-2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>104 long standing PH</td>
</tr>
<tr>
<td>36 no interview</td>
</tr>
<tr>
<td>68 new PH</td>
</tr>
<tr>
<td>72 no interview</td>
</tr>
</tbody>
</table>

PH = residence permit holders

**Health measures**

Mental and physical health indicators were recorded at both T1 and T2. General health was measured by the first item of the SF-36 (Short Form Health Survey-36 (13)), where respondents are asked to rate their general health on a five-point likert scale (1 = ‘bad’ to 5 = ‘excellent’). Mental health was assessed by the presence/absence of anxiety and depression symptoms and PTSD symptoms. Anxiety/depression was measured using the HSCL-25 (Hopkins Symptoms Checklist-25), with 10 items assessing anxiety and 15 items assessing depression (14). Individuals with a mean score >1.75 for anxiety and/or depression were considered to suffer from anxiety/depression. PTSD was measured using the HTQ (Harvard Trauma
Explaining health and healthcare utilisation of ethnic minorities

Questionnaire), part IV (15). Only the first 16 items of the total list of 30 items were taken into account. The rest (14 items) were considered to be less specific for PTSD (12). Individuals with a mean score ≥ 2.5 on the first 16 items were considered to suffer from PTSD. Physical health was measured counting the number of chronic problems reported from a list of 28 chronic conditions experienced in the past 12 months. Change scores were calculated by subtracting scores of T1 to T2 scores.

Socio-demographic variables

Information on age, gender, country of origin (Afghanistan, Iran, Somalia), educational level (coded as 1 = ‘low’, 2 = ‘medium’, 3 = ‘high’) and residence permit at T1 (asylum seeker or permit holder) was also available from the survey and from the registers used for including respondents at T1 (for more details on the registers, see (12)).

Post migration living difficulties

Participants were asked about possible difficulties experienced in the Netherlands at both T1 and T2. The checklist included 18 problems often reported by refugees in research on post-migratory stressors (e.g. delays in the application for a residence permit; loneliness; lack of purpose in daily activities) (16-18). They were asked to indicate the extent to which they experienced these difficulties in the previous month (1 = ‘not at all’ to 4 = ‘extremely’, items scored as 3 or 4 were considered as positive answers). Experienced difficulties were summarized into 7 domains (table 5.1) using averages. Differences between T1 and T2 were computed per domain, by subtracting T1 from T2 scores.

Analyses

Changes in mental and physical health
Changes in mental and physical health indicators were examined separately for longstanding and new permit holders and statistically tested (t-tests and Mc Nemar tests for paired samples).
Table 5.1 Living difficulties items and domains

<table>
<thead>
<tr>
<th>Domains</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Uiters et al. 388-93)</td>
<td>(n=18)</td>
</tr>
<tr>
<td>Procedure</td>
<td>Uncertainty about residence status</td>
</tr>
<tr>
<td></td>
<td>Length of asylum procedure</td>
</tr>
<tr>
<td>New Culture-language</td>
<td>Communication/language difficulties</td>
</tr>
<tr>
<td></td>
<td>Unfamiliar with habits, customs, rules</td>
</tr>
<tr>
<td></td>
<td>Difficulties with food</td>
</tr>
<tr>
<td>Housing</td>
<td>Housing difficulties</td>
</tr>
<tr>
<td></td>
<td>Lack of privacy</td>
</tr>
<tr>
<td>Work</td>
<td>Work below qualification</td>
</tr>
<tr>
<td></td>
<td>Financial difficulties</td>
</tr>
<tr>
<td></td>
<td>Boredom, lack of purpose in daily activities</td>
</tr>
<tr>
<td>Family/social support</td>
<td>Loneliness</td>
</tr>
<tr>
<td></td>
<td>Marriage/relationship difficulties</td>
</tr>
<tr>
<td></td>
<td>Difficulties with children</td>
</tr>
<tr>
<td>Social position</td>
<td>Loss of social position/status</td>
</tr>
<tr>
<td></td>
<td>Discrimination</td>
</tr>
<tr>
<td>Missing country of origin</td>
<td>Homesick</td>
</tr>
<tr>
<td></td>
<td>Worry about family at home</td>
</tr>
<tr>
<td></td>
<td>Difficulties with climate/weather</td>
</tr>
</tbody>
</table>

**Association between change in residence status and health changes, and mediation effect of living difficulties**

For each health indicator on which statistically significant changes were reported for at least one of either group (p<0.05), linear regression analyses were performed to first test the association between health change and change in residence status (relationship A in figure 5.2, model A in table 5.5). Subsequently, the mediating effect of change in living difficulties in this relationship was assessed by a) looking at the association between change in residence status and change in living difficulties domains, relationship B in figure 5.2 (which is a pre-requisite for mediation analysis, (19)), b) looking at the association between change in living difficulties domains and change in health outcomes, relationship C in figure 5.2 (second criterion for mediation analysis), c) adding each change in living difficulties domains separately to the models predicting health changes and looking at its effect on the regression coefficient of change in residence.
status (relationship $A^2$ in figure 5.2, model B in table 5.6). Sobel tests were conducted to verify whether the effect of change in permit status on health changes through change in living difficulties were different from zero (20). These analyses were all adjusted for age, gender, country of origin and educational level. All analyses were performed using SPSS 16.00 for Windows.

Figure 5.2  Hypothetical associations between change in residence status and change in health outcome

Results

Study population

Table 5.2 presents the main socio-demographic characteristics of participants to both waves compared to the initial study population. Proportionally, participants to both T1 and T2 did not differ from the initial study population regarding the main socio-demographic characteristics, except for residence permit and country of origin. The two-wave cohort included proportionally more permit holders than asylum seekers (status at T1). This results from a selection in the initial population: not all asylum seekers at T1 had obtained a permit at T2, and 26% of the initial respondents (mainly asylum seekers) left without leaving an address. This
explains the overrepresentation of longstanding permit holders in the two-wave cohort.

Table 5.2  Socio-demographic characteristics of participants to one (T1) and to both waves (T1 and T2)

<table>
<thead>
<tr>
<th></th>
<th>T1 ( N=410)</th>
<th>T1 and T2 (N= 172)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country of origin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Afghanistan</td>
<td>206 (50.2)</td>
<td>82 (47.7)</td>
</tr>
<tr>
<td>Iran</td>
<td>117 (28.5)</td>
<td>63 (36.6)</td>
</tr>
<tr>
<td>Somalia</td>
<td>87 (21.2)</td>
<td>27 (15.7)</td>
</tr>
<tr>
<td><strong>Age mean at T1 (SD)</strong></td>
<td>37.0 (12.4)</td>
<td>39.1 (13.1)</td>
</tr>
<tr>
<td><strong>Residence status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permit holder at T1</td>
<td>178 (43.4)</td>
<td>104 (60.5)</td>
</tr>
<tr>
<td>(=longstanding permit holder at T2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asylum seeker at T1</td>
<td>232 (56.6)</td>
<td>68 (39.5)</td>
</tr>
<tr>
<td>(=new permit holder at T2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>241 (58.8)</td>
<td>84 (48.8)</td>
</tr>
<tr>
<td>Female</td>
<td>169 (41.2)</td>
<td>88 (51.2)</td>
</tr>
<tr>
<td><strong>Education at T1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(T1 n=408)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None/religious/primary</td>
<td>109 (26.6)</td>
<td>35 (20.7)</td>
</tr>
<tr>
<td>Secondary</td>
<td>142 (34.6)</td>
<td>62 (36.0)</td>
</tr>
<tr>
<td>Vocational/university</td>
<td>159 (38.8)</td>
<td>75 (43.3)</td>
</tr>
<tr>
<td><strong>Marital status at T1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(T1 n=408)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>17 (4.2)</td>
<td>7 (4.1)</td>
</tr>
<tr>
<td>Never married</td>
<td>40 (9.8)</td>
<td>20 (11.6)</td>
</tr>
<tr>
<td>Married/living together</td>
<td>252 (61.6)</td>
<td>111 (64.5)</td>
</tr>
<tr>
<td>Widowed</td>
<td>100 (24.4)</td>
<td>34 (19.8)</td>
</tr>
</tbody>
</table>

Changes in mental and physical health

Table 5.3 presents the changes in health indicators for each group between T1 and T2. For the longstanding permit holders, the self-reported general health mean score dropped with 0.34 point on a five-point scale, while it increased by 0.33 point for new permit holders. The new permit holders
reported on average significantly less chronic conditions at T2 than at T1. Also for this group, the proportion of participants with PTSD and of anxiety/depression dropped respectively by 11.7% and by 19.1%. This change for PTSD was borderline significant (p=0.07) for new permit holders. Changes in number of chronic conditions, PTSD and anxiety/depression were not statistically significant for longstanding permit holders.

**Table 5.3 Changes in health outcomes between T1 and T2 for longstanding and new permit holders**

<table>
<thead>
<tr>
<th></th>
<th>Longstanding permit holders</th>
<th>New permit holders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1</td>
<td>T2</td>
</tr>
<tr>
<td>General Health (mean score; range 1-5)</td>
<td>2.93</td>
<td>2.59</td>
</tr>
<tr>
<td>Number of chronic conditions (mean)</td>
<td>3.43</td>
<td>3.72</td>
</tr>
<tr>
<td>PTSD</td>
<td>8.7%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Anxiety/depression</td>
<td>40.4%</td>
<td>31.7%</td>
</tr>
</tbody>
</table>

Changes marked with bold letters are significant (p < 0.05). 
* Interpretation for health: ✯ health improvement ✯ health decline - no change

**Association between change in residence status and health changes, and mediation effect of living difficulties**

We analysed first the association between change in residence status (reference group: longstanding permit holders) and change in living difficulties domains (relationship B in figure 5.2), adjusted for socio-demographic variables (age, gender, country of origin, educational level). These associations were statistically significant, except for the association between change in status and change in the domain ‘Missing the country of origin’ (table 5.4), and showed that new permit holders were experiencing greater decreases in living difficulties domains between both measurements than longstanding permit holders.
Table 5.4  Associations between change in residence status and change in living difficulties (domains)\textsuperscript{1,2}

<table>
<thead>
<tr>
<th>Change in Status</th>
<th>Unstandardized coefficient</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>All domains</td>
<td>-4.594</td>
<td>-5.711; -3.477</td>
</tr>
<tr>
<td>Procedure</td>
<td>-1.590</td>
<td>-1.910; -1.269</td>
</tr>
<tr>
<td>New culture</td>
<td>-0.413</td>
<td>-0.612; -0.215</td>
</tr>
<tr>
<td>Employment situation</td>
<td>-0.583</td>
<td>-0.860; -0.305</td>
</tr>
<tr>
<td>Housing situation</td>
<td>-1.330</td>
<td>-1.668; -0.992</td>
</tr>
<tr>
<td>Family/social support</td>
<td>-0.327</td>
<td>-0.577; -0.077</td>
</tr>
<tr>
<td>Missing country of origin</td>
<td>-0.066</td>
<td>-0.377; 0.245</td>
</tr>
<tr>
<td>Social position</td>
<td>-0.610</td>
<td>-0.915; -0.305</td>
</tr>
</tbody>
</table>

\textsuperscript{1}Adjusted for age, gender, country of origin, educational level.
\textsuperscript{2}Associations marked with bold letters are significant (p < 0.05)

Table 5.5 presents the results of the linear regression models with the change in health indicators as dependent variables. The first model (Model A) present the regression coefficients of change in residence status, adjusted for socio-demographic characteristics. The second models (Model B) present the same association after adding information on change in living difficulties without distinction between domains. In the first models, change in status was a significant predictor of changes in PTSD and in anxiety/depression score, and in self-reported general health score. Being a new permit holder was negatively associated with an increase in PTSD or anxiety/depression score between T1 and T2, and positively associated with an increase (improvement) in self-rated health. However, the association with change in number of chronic conditions was not significant.

When adding information on change in living difficulties between T1 and T2 (without distinction between domains), change in status no longer significantly predicted change in PTSD score, anxiety/depression score and general health score. Change in living difficulties was significantly associated with change in health indicators, suggesting a mediating effect of change in living difficulties in the relationship between change in status and change in PTSD score, anxiety/depression score and self-rated health. Sobel tests confirmed the mediation effects (p<0.05).
Table 5.5  Linear regression analyses for changes between T1 and T2 in PTSD score, anxiety/depression score, number of chronic conditions and (self-reported) general health\textsuperscript{1,2}

<table>
<thead>
<tr>
<th></th>
<th>Δ PTSD score (T2-T1)</th>
<th>Δ Anxiety / depression score (T2-T1)</th>
<th>Δ Number of chronic conditions (T2-T1)</th>
<th>Δ General health (T2-T1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in status: Longstand. Ref</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New (-0.612; -0.227; 0.192)</td>
<td>-0.402</td>
<td>-0.004</td>
<td>-0.298</td>
<td>0.038</td>
</tr>
<tr>
<td>Change in living difficulties (T2-T1)</td>
<td>0.087</td>
<td>p&lt;0.05</td>
<td>0.073</td>
<td>p&lt;0.05</td>
</tr>
</tbody>
</table>

\textsuperscript{1} Adjusted for age, gender, country of origin, educational level

\textsuperscript{2} Associations marked with bold letters are significant (p < 0.05)
The last step of the analyses (table 5.6) specifically examines the relative contribution of each change in living difficulties domain to the association between change in status and change in PTSD score, change in anxiety/depression score and change in self-rated general health. In this last step, separate regression models were used for each living difficulties domain, except for the domain “Missing the country of origin”, because it did not meet the criterion for mediation analysis as shown in table 5. For the models predicting change in PTSD score, four domains significantly contributed to the models: New culture, Employment situation, Family/social support, Social position. Each of them also mediated the association between change in status and change in PTSD score (Sobel tests, p<0.05). For the models predicting change in anxiety/depression, the same four domains mediated the association between change in status and change in anxiety/depression (Sobel tests, p<0.05). For the last set of models predicting change in self-rated general health, change in living difficulties concerning the Employment situation and the Family/social support were the only domains mediating the relationship between change in status and change in self-rated general health (Sobel tests, p<0.05).
Table 5.6 Changes between T1 and T2 in PTSD score, anxiety/depression score and general health score: associations with change in status before (A) and after (B) adding one living difficulties domain to the separate linear regression models.\(^1\)\(^2\)

<table>
<thead>
<tr>
<th>Change in living difficulties</th>
<th>Change in status (ref: longstanding)</th>
<th>Sobel-test</th>
<th>Change in living difficulties</th>
<th>Change in status (ref: longstanding)</th>
<th>Sobel-test</th>
<th>Change in living difficulties</th>
<th>Change in status (ref: longstanding)</th>
<th>Sobel-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-</td>
<td>-0.299</td>
<td></td>
<td>-0.329</td>
<td>-</td>
<td></td>
<td></td>
<td>0.461</td>
</tr>
<tr>
<td>B</td>
<td>Procedure</td>
<td>0.098</td>
<td>-0.148</td>
<td>n.a.</td>
<td>0.079</td>
<td>-0.208</td>
<td>n.a.</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>New culture</td>
<td>0.372</td>
<td>-0.153</td>
<td>p&lt;0.05</td>
<td>0.323</td>
<td>-0.202</td>
<td>p&lt;0.05</td>
<td>-0.286</td>
</tr>
<tr>
<td></td>
<td>Employment situation</td>
<td>0.342</td>
<td>-0.036</td>
<td>p&lt;0.05</td>
<td>0.271</td>
<td>-0.169</td>
<td>p&lt;0.05</td>
<td>-0.371</td>
</tr>
<tr>
<td></td>
<td>Housing situation</td>
<td>0.016</td>
<td>-0.278</td>
<td>n.a.</td>
<td>0.064</td>
<td>-0.246</td>
<td>n.a.</td>
<td>-0.164</td>
</tr>
<tr>
<td></td>
<td>Family/social support</td>
<td>0.345</td>
<td>-0.195</td>
<td>p&lt;0.05</td>
<td>0.344</td>
<td>-0.226</td>
<td>p&lt;0.05</td>
<td>-0.413</td>
</tr>
<tr>
<td></td>
<td>Missing country of origin</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social position</td>
<td>0.197</td>
<td>-0.172</td>
<td>p&lt;0.05</td>
<td>0.168</td>
<td>-0.221</td>
<td>p&lt;0.05</td>
<td>-0.080</td>
</tr>
</tbody>
</table>

\(^1\) Adjusted for age, gender, country of origin, educational level

\(^2\) Associations marked with bold letters are significant (p < 0.05)
Discussion

These findings showed that mental and general health of refugees improved after obtaining a residence permit. These improvements were related to improvements of living conditions, more specifically employment and the presence of family/social support. Mediation analyses showed that the effects of getting a residence permit on health improvements transited through an improvement in living conditions. Reported living difficulties decreased after obtaining a residence permit, and this showed to be the mechanism linking change in residence permit to improvements in mental health and general health.

These results confirm findings from previous studies on the importance of the conditions in which refugees are placed while awaiting a residence status (10,11). The study of Nickerson (10) similarly examined the difference between refugees with a temporary and with a permanent status, showing the mediating effect of living conditions between change in refugee status and change in living conditions. Contrary to the study of Nickerson (10), our study decomposed the effect of living difficulties into several domains, pointing at employment situation and family and social support as the main mechanisms through which change in residence status operates in PTSD and anxiety/depression recovery, and in general health improvement. Specifically for mental health recovery, experienced difficulties in finding one’s way in a new culture, employment situation, family/social support and the social position underlie the change in permit, more than worries about the asylum procedure, housing situation, or missing one’s country of origin. For general health, employment situation and family/social support were the two factors related to the changes.

Change in worries about the procedure did not significantly mediate the role of residence status. A high colinearity between the two variables could be playing a part. However, previous univariate analyses showed that the variable ‘change in worries about the asylum procedure’ varied among longstanding permit holders as well as among new permit holders. We cannot exclude that this variation was not sufficient for our analyses, and further research should look at this point in a larger sample, and preferably at more time points around obtaining a residence permit. For now, we interpret this result as an indication that other factors play a greater role in the mediation of change in residence permit, and that these offer practical
Explaining health and healthcare utilisation of ethnic minorities.

Changes in employment situation have been shown to play a part in health changes of traditional immigrant groups in the Netherlands (21). The large-scale longitudinal study of Beiser and Hou (22) among Asian refugees in Canada showed that unemployment was a potential risk factor for depression. Other studies looked at boredom or lack of meaningful activities of asylum seekers (who are not fully allowed to work during the procedure) and found associations with psychological problems (17,10). This is confirmed by our results for changes in mental health as well as for changes in general health, because change in living difficulties related to employment mediated the effect of change in residence status for changes in all health outcomes.

The positive association between changes in family and social support and mental and general health was confirmed by a few studies examining this relationship with mental health (10,23). The role of difficulties in the contact with a new culture on mental health of refugees is documented and confirmed by several studies on acculturative stress among refugees (24-26). In our study, changes in living difficulties related to social position were associated with changes in mental health. Studies examining the social mobility and employment of refugees and migrants on mental health confirm this finding (27).

This study has some limitations, among which the small sample size. This limits the number of items which could be analysed in the multivariate models. Another limitation is that our data is based on self-report. The question remains on the validity of health outcomes which are not clinically measured. PTSD and anxiety/depression were measured using existing, validated instruments. Self-reported general health, measured with the first item of the SF-36, is an indicator of well-being, and a good predictor of health services use, but not of illness. The number of self-reported chronic conditions is not optimal to measure accurately chronic conditions, but gives an indication of the general health status. However, our primary purpose was to capture changes in health, and those health outcomes were measured in exactly the same way at both waves within the same subjects. Therefore, these limitations do not infirm the validity of our conclusions on changes in health outcomes. We hope to present the results of the medical records study, and confront self-report to medical data on a later stage.
Nevertheless, these results add up to the existing evidence for the key role of practical and social circumstances, such as employment and family and social support, in which refugees are placed upon arrival in a host country for health improvement. These results suggest the importance of policies facilitating labour participation and stimulating social support networks early in the asylum procedure, as they might bear results on mental and general health improvement for a group at risk. Further research on the topic should include more groups in order to test these results and their generalization to refugees from other countries.
References


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