



## **International Journal of Migration, Health and Social Care**

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#### **Article information:**

To cite this document: Tina Eriksson-Sjöo, Margareta Cederberg, Margareta Östman, Solvig Ekblad, (2012), "Quality of life and health promotion intervention - a follow up study among newly-arrived Arabic-speaking refugees in Malmö, Sweden", International Journal of Migration, Health and Social Care, Vol. 8 Iss: 3 pp. 112 - 126

Permanent link to this document:

<http://dx.doi.org/10.1108/17479891211267302>

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# Quality of life and health promotion intervention – a follow up study among newly-arrived Arabic-speaking refugees in Malmö, Sweden

Tina Eriksson-Sjöo, Margareta Cederberg, Margareta Östman and Solvig Ekblad

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## Abstract

**Purpose** – *This study aims to illuminate self-perceived health-related quality of life (HRQoL) among newly-arrived Arabic-speaking refugees in Malmö, Sweden participating in a specific group Health Promotion activity.*

**Design/methodology/approach** – *Data consist of questionnaires, observations and oral evaluations in groups. Questions about HRQoL was measured by EQ-5D self-assessment containing five dimensions and three response options of severity, including a visual analog health rating scale. Participants' sleep patterns were measured by a sleep and recovery questionnaire with questions about sleep quality and sleep quantity.*

**Findings** – *The results show that disturbed sleep relates to EQ-5D variables and to health rating scores. Moreover, there are changes over time and participants' perceptions of their health and quality of life in most EQ-5D variables have significantly increased after the end of activity. In the variables pain and depression an improvement remains even at second follow up and health rating scores are higher at both follow ups relative to what it was originally. Sleep and recovery problems were perceived as less difficult at the course completion and second follow up.*

**Research limitations/implications** – *Because of practical and ethical reasons there is an absence of a control group in this study.*

**Practical implications** – *The paper includes implications for education in medicine, health care and social work, for the design of the refugee reception programs and for the inter-professional collaborations.*

**Originality/value** – *The paper shows that health promotion interventions in group setting in the first stage of resettlement turn out to be useful according to HRQoL and knowledge of the health care system.*

**Keywords** *Health promotion, Refugees, Arabic-speaking, Health-related quality of life, Sweden, Immigration, Health care*

**Paper type** *Research paper*

## Introduction

This article focuses on benefits of a Health Promotion Program for newly arrived refugees from Arabic-speaking countries. It describes a preventive intervention, Health Promotion Intervention Course (HPIC), and participants' perception of the intervention immediately after and six months after the course, as well as their perceived health before and after participation in the intervention.

Human migration has changed significantly in number and nature with the process of globalization. About 214 million people are on the move internationally and approximately three-quarters of a billion people migrate within their own country (UNHCR, 2011). However, there has been a lack of coordinated policy approaches to address the health implications

Special thanks to Mr Patrick Hort for language editing of the text. The authors have no competing interests.

associated with modern migration (Zimmerman *et al.*, 2011). More research is therefore required with a view to helping migrant and ethnic minority groups increase their participation in our societies, which are characterized by diversity (Bhopal, 2012).

At present, Sweden grants asylum to persons who have reason to fear persecution in their native country due to race, nationality, religious or political beliefs, gender, sexual orientation or membership of a particular social group, in accordance with the Geneva Convention. Asylum in Sweden can also be obtained by persons who have a well-grounded fear of suffering the death penalty or torture or who need protection due to an internal or external conflict or an environmental disaster in their native country. Furthermore, it is possible to obtain asylum for family reunification ([www.migrationsverket.se](http://www.migrationsverket.se)).

The immigrants who are most prone to early marginalization are refugees, especially female refugees. A cross-sectional study found that female refugees have a higher likelihood of mental ill health than non-refugee immigrant women, which may increase early marginalization and lead to difficulties in integrating with Swedish society (Hollander *et al.*, 2011). A cross-sectional study on the same population showed that male refugees in Sweden have a higher risk of mortality in cardiovascular and external causes compared with non-labour non-refugee male immigrants (Hollander *et al.*, 2012). Clinical experience shows that refugees seek primary health care for their perceived illness, which is communicated by somatic complaints (Mollica *et al.*, 2011). In a systematic review and meta-analysis, including 161 articles and the results of 181 surveys comprising 81,866 refugees and other conflict-affected persons from 40 countries, Steel *et al.* (2009) showed that pre-migration stress (traumatic events such as torture and other traumatic events) is associated with post-traumatic stress disorder (PTSD) and depression. PTSD has been found to be the most common form of mental ill health among refugees (Fazel *et al.*, 2005), followed by mood disorders (Carta *et al.*, 2005). There is co-morbidity between these diagnoses (Mollica *et al.*, 2011). The literature indicates a dose-effect relationship in that increasing levels of trauma lead to higher rates and severity of PTSD and depression (Mollica *et al.*, 1998; Sledjeski *et al.*, 2008). PTSD increases the risk of various diseases, such as hypertension, cardiovascular disease and diabetes (Kinzie *et al.*, 2008), which need to be identified and treated (Mollica *et al.*, 2011).

Post-migration stress, i.e. events that cause stress after arrival in the host country (Silove, 1999), has a negative impact on health-related quality of life (HRQoL) among newly arrived refugees (Ekblad *et al.*, 1999). A contributory factor here is insufficient sleep, which is an independent risk factor for common diseases, increased mortality and impaired cognitive function, such as impaired learning ability (Eriksson-Sjöo *et al.*, 2010; Johansson Blight *et al.*, 2009). In our opinion, it is important to develop appropriate evidence-based knowledge and information on health issues for newly arrived refugees so that they can get better self-care and correct use of the health care system.

### ***Aim and research questions***

This study aimed to illuminate self-perceived HRQoL among newly arrived Arabic-speaking refugees in Malmö, southern Sweden, before and after they had participated in a specific health promotion activity, called HPIC (Berkson and Daimyo, 2011; Eriksson-Sjöo *et al.*, 2010; Ekblad and Asplund, 2012). We were interested in how participants perceive their health before and after attending an HPIC. The research questions were:

*RQ1.* How do HPIC participants assess their health before and after HPIC?

*RQ2.* What are the participants' most important issues concerning health, personal care and the Swedish health care system?

*RQ3.* How do the participants describe their experiences of participating in HPIC?

This article begins with a brief description of the Swedish reception system and the HPIC, its contents and structure. That is followed by an account of the study and its results with Arabic-speaking groups in 2010-2011. Finally, we discuss our results, the limitations of the study and implications for practice.

### *The Swedish reception system*

All newly arrived immigrants with permission to stay in Sweden are offered instruction in Swedish: "Swedish for immigrants" (SFI). SFI aims to strengthen the participants' occupational status on the labour market. Despite the local introduction programs for newly arrived immigrants, many of them discontinue their studies in SFI; just a few obtain grades in the course and only just over half of all those who have received a residence permit begin SFI within three years (SOU, 2003:75).

A new law from December 2010 (Lag, 2010:197) meant that responsibility for the reception program and the introduction activities for certain newly arrived immigrants who have at least 25 per cent ability to work were transferred from the municipalities to the Swedish Public Employment Service. The policy, known as "the work line" (*arbetslinjen*), aims for a 40 hours week and for first two years includes compulsory activities such as community information, a Swedish language course and practice in workplaces. The goal is to support self-sufficiency. However, systematized knowledge about the Swedish health care system and how to promote health has so far not been included in the new Swedish refugee reception program.

### *The Health Promotion Intervention Course*

The HPIC is a group training course in which participants receive professional information from clinically active leaders/teachers, who are nurses, physicians, physiotherapists, psychologists, midwives or dentists.

The theoretical model behind the HPIC approach, developed by Silove (1999), is based on the importance of understanding individuals in their context, i.e. the participants must perceive themselves as attached and confirmed, which in turn leads to security, less stress and better perceived health. Silove based the program on five health systems (interpersonal attachment/bonds and networks, security and safety, identity and roles, human rights/justice and protection from abuse, and finally, existential meaning and coherence). These health systems can, under normal circumstances, ensure that the interaction between the individual and society functions in a manner that supports the personal and social equilibrium (Silove, 1999; Lindencrona *et al.*, 2008; Eriksson-Sjö and Ekblad, 2010).

Group activities are structured in dimensions of time (three hours a week for seven to eight weeks), place (same place), content (seven subjects) and form (one or several course coordinators follow the group each time). Lessons are translated by the same professional interpreter at all course sessions.

The group consists of eight to 14 participants, is closed to new entrants and no information is given to external authorities. The program was started by Professor Richard F. Mollica at the HPRT ([www.hpert-cambridge.org](http://www.hpert-cambridge.org)) in the USA (Berkson and Daimyo, 2011) and the content consists of topics such as health care system's structure, self-care, diet and nutrition, physical and mental health, stress and stress management, concentration and sleep, common diseases, symptoms and treatment, sexual health, dental health and exercises to facilitate concentration, relaxation and sleep (Eriksson-Sjö and Ekblad, 2010).

### *Setting*

The HPIC recruited participants from a waiting list to the programme IntroRehab in Malmö[1] as well as from other activities in the regular local introduction for new arrivals. The target groups in focus for this study are people from Arabic-speaking countries who, after the asylum process, have been granted a residence permit or are close relatives of such people. The data were collected during 2010 and up to June 2011 over a total of 16 months.

### **Methods**

The study was prospective, with data collected before and immediately after the HPIC and at a six-month follow-up. Data consist of questionnaires, observations and oral evaluation in groups.

### *Study design*

Questionnaire and participant observations during lessons were used for data collection in the study. Answering the questionnaire took about 15 min. The questions were both in Swedish and in the participants' native language (Arabic) to afford a better understanding and an opportunity to learn the Swedish words. Mixed methods were used to obtain a better understanding of this research area by combining quantitative and qualitative data. In this approach, the researcher is able to collect the two types of data simultaneously during a single data collection phase. In addition, a concurrent triangulation approach gives an opportunity to investigate issues from different perspectives and a ground to confirm the results, which may increase the validity of data (Creswell, 2009).

Participation in the survey was voluntary. The participants agreed to participate but were free at any time to terminate without prejudice to participation in the HPIC or other introduction activities. The researcher (first author) and the same professional interpreter as used in the course were present each time the participants filled out the questionnaires. At each group's first lesson the researcher went through all the survey questions and the participants could ask questions about the questionnaire and get answers directly from the researcher with help from the professional interpreter if needed.

In this article, we have chosen to report the results of the follow-up survey for the participants who attended all the three data collections ( $n = 39$ ) and the qualitative study with participants who started the program. Those who did not respond to the second follow-up are referred to as drop-outs even though they did complete the HPIC. Other results are reported elsewhere.

*Quantitative data: two questionnaires.* In order to evaluate the program from the participant's point of view – a user-friendly approach – the project coordinator (the first author) administered a questionnaire individually to each participant during the first and last lessons of HPIC and by mail six months after HPIC.

HRQoL was measured by EQ-5D self-assessment (EuroQoL Group, 1990), which is translated/back translated into Arabic (Lebanese version) and copyrighted. The project was authorized to use the form already translated into Arabic (Lebanon version). In EQ-5D, the individual describes his or her health in five dimensions (mobility, hygiene/self-care, main activities, pain/discomfort, anxiety/depression) with three response options as to severity (none, moderate or severe problems), as well as self-rated health EQ VAS values on a visual analogue scale from 0 to 100, where 100 represents the "best imaginable health state" and 0 the "worst imaginable health state".

Participants' sleep patterns were measured by a shortened version of the Karolinska sleep and recovery questionnaire (Åkerstedt *et al.*, 2002). Questions concerned the quality and quantity of sleep, such as difficulty in falling asleep, in waking up, disturbed sleep, snoring, nightmares, problems with alertness during the day, etc. Six questions were combined into a sleep index and an awakening index consisted of three questions. The disturbed sleep index (difficulties falling asleep, repetitive waking up, disturbed sleep) and the awakening sleep index contained three questions (difficulties in waking up, waking up exhausted, repeated awakenings). The remaining two questions (nightmares and struggling against falling asleep in daytime) were treated as single items. The responses covered six levels of severity (always, usually, often, sometimes, rarely and never). The participants did not have access to their previous answers on the subsequent occasions.

*Sociodemographic questions.* Questions included sociodemographic background variables such as age, gender, marital status, education, work experience, length of stay in Sweden and reason for migration.

*Qualitative data: observation and oral evaluation.* The qualitative data collection (the unit of analysis) consisted of two parts: participant observations from lessons and oral course evaluations. The coordinator (first author) made participant observations in all groups and in every lesson, a total of 178 hours during 16 months. The aim was to take account of the questions and stories the participants expressed during the lessons in order to get a deeper

understanding of their needs. The coordinator sat beside the others around the table and made notes when participants asked a question or said something related to the theme. She did not make notes either about expressions and relationships among participants, or about information or responses from the leader. Sometimes she asked the participants if they had more questions about the current theme, sometimes she put a supplementary question. Lessons were held in Swedish and all communication was translated by the same professional interpreter in the room. The notes were written down directly as the professional interpreter translated and the participants were informed about the coordinator taking notes. No participants made an objection.

At the end of each course the coordinator (and an assistant coordinator) conducted an oral course evaluation with the course participants. The main questions were: what do you perceive as the benefit of the course for yourself? What would you like to highlight? What have you missed or wanted to have more of? The answers were written down directly as the professional interpreter translated.

#### *Translation/back translation*

The questionnaires (without copyright) were translated into the Arabic language by an authorized translator and back translated orally by an authorized medical interpreter. These two versions were compared and minor changes of no significance were made.

#### *Participants and drop-outs*

Participants were men and women aged between 18 and 64 years participating in eight HPICs. All of them were Arabic-speaking and participated voluntarily. Each group consisted of between eight and 12 participants of both sexes.

A total of 78 Arabic-speaking men and women participated. Each course lasted for seven weeks with a three hours meeting each week. The final lesson included the evaluation and follow-up and lasted for three and a half hours. Sixty-five participants (39 men and 26 women) took part in the study initially. The first follow-up took place on the last day of course and seven participants from the eight groups were absent; thus there were 58 participants in the first follow-up. Limited resources led to the second follow-up being conducted by mail six months after course completion. Out of 65, 39 answered this postal survey, i.e. 60 percent.

#### *Data analysis*

*Statistical analysis.* The collected quantitative data were processed statistically by SPSS for Windows, version 18. Sociodemographic characteristics, HRQoL dimensions and quality of sleep were described by means, standard deviations and frequencies according to gender and the two follow-ups.

To investigate changes at the group level, paired samples *t*-test and binomial distribution for exact significance test were performed. Spearman correlation analyses have been used to identify the strength of associations between ranked (non-parametric) variables in the questionnaires. Only *p*-values under 0.05 are reported in the results.

*Qualitative data analysis.* The qualitative data were analysed with content analyses (Graneheim and Lundman, 2004), using an inductive approach that is recommended if there is not enough previous knowledge, which was the case in this study (Elo and Kyngäs, 2007). In inductive content analysis, the categories are derived from the data and moved from the specific to the general. Other authors (Hsieh and Shannon, 2005) refer to the concept "conventional content analysis" when talking about a type of design that is appropriate when existing theory or research literature on a phenomenon is limited. We assume that in studies which rely on an interpreter for the translation of communication, analysing the latent content is questionable; we therefore decided only to analyse the manifest content. By paying attention to the issues participants express, the analysis can contribute information about the knowledge and the needs the participants have. For ethical reasons, tape-recording was not used.

The notes from lessons were combined in a first step so that all notes from, for example, the physician's eight lessons formed a separate notebook. That gave six notebooks, one for each theme/clinical expert. The content of the questions reflected the themes that were raised in lessons. In step two, the notes on questions and narratives were marked with an identification colour and coded into the content categories: mobility, self-care/hygiene, activity, pain, anxiety/depression, sleeping, awakening, nightmares and others.

In some cases a question or a story could not be clearly allocated to a particular category. Comparisons with other data were needed in order to classify the observations as belonging to a particular group.

The next step in the organisation of data involved reading the text from the notebooks and the eight evaluations several times to obtain a sense of the whole. Thereby the text was sorted/coded into four higher order categories: What types of question concerned the content of HPIC? What comments did participants make about the setup of HPIC? What areas does HPIC seem to cover and what did the participants miss? What would participants communicate to policy-makers and managers of various social activities? Two of the higher-order categories were sorted in the following subgroups: questions to gain knowledge, expressions of opinion and attitude, intimate questions and comments, unmet needs and advice for the future.

An agreement about how to sort the material was achieved after reflection and discussion among all the authors.

### *Ethical considerations*

The study was approved by the Ethical Board of Lund University (Dnr 2010/553). Each questionnaire was marked with a code (a number) and this code was used at the measuring dates instead of the participant's name and could not be linked to how they responded to various questions. All answers were confidential, revealing only the participant's sex. To reduce the risk of exposing an already vulnerable group, the analysis and the presentation of results were performed at group level.

## Results

Reported results from the two follow-up surveys of those who participated in all three data collections ( $n = 39$ ) are presented, followed by the qualitative study ( $n = 65$ ). Those who did not respond to the second follow-up in the quantitative study are referred to as drop-outs.

### *Sample characteristics*

A total of 39 persons participated; 21 men and 18 women. Their sociodemographic details are given in Table I. The overall mean age of the 39 participants was 44 years. Male participants had nearly 13 years of compulsory schooling in their home country and female participants

**Table I** Sociodemographic data; mean age, years in school, in work, in Sweden and number of children, participants and drop-outs

	Total (n = 39)	Male (n = 21)	Female (n = 18)	Drop-outs total (n = 26)
Mean age (SD)	44.05 (10,925)	43.95 (10,707)	44.17 (11,485)	35.31 (9,225)*
Min-max	23-63	23-61	24-63	20-53
Number of children, Md	3	3	3	2
Min-max	0-7	0-5	0-7	0-5
Mean years (SD) in school	11.55 (4,567)	12.69 (4,316)	10.33 (4,655)	12.0 (3,782)
Min-max	0-18	4-18	0-16	5-18
Mean years in work before arrival	17.23 (12,472)	18.41 (10,829)	15 (15,588)	9.27 (5,994)
Min-max	0-35	2-35	0-35	1-22**
Mean years in Sweden with permission	1.69 (1,176)	1.6 (1,326)	1.8 (1,014)	1.9 (1,513)
Min-max	0-5			0-5

**Notes:** \*Significance in age between drop-outs and intervention group:  $t = 3.358$ ,  $df = 63$ ,  $p < 0.001$ ; \*\*significance in years in work between drop-outs and intervention group:  $t = -2.315$ ,  $df = 39$ ,  $p < 0.009$

had a mean of just over ten years. Mean years in work were 18 for male and 15 for female participants. The participants had on average been living in Sweden for one and a half years. A majority of both male and female participants reported that they were married (69 percent). Over half of the participants (59 percent; 69 percent women, 50 percent men) came to Sweden to save themselves from violence and war in their home countries. The median number of children was three for both female and male participants (Table I).

*Drop-outs.* The 26 drop-outs were significantly younger (mean age 35) than the participants (intervention group above) ( $t = 3.358$ ,  $df = 63$ ,  $p < 0.001$ ) and had significantly fewer work years (mean nine years) in their home country than the participants (intervention group above): ( $t = -2.315$ ,  $df = 39$ ,  $p < 0.009$ ). There was no significant difference between participants and drop-outs in terms of gender, marital status and educational background (Table I).

#### **Assessment of perceived health by EQ-5D at baseline, follow-up 1 and follow-up 2**

At baseline, women reported some problems (response alternatives were no problems, some problems, much problems) significantly more often than men regarding the ability to carry out main activities ( $\chi^2=6,376$ ,  $df = 2$ ,  $p < 0.041$ ). Totally, significantly fewer experienced much pain problems ( $p < 0.004$ ) as well as much depression problems ( $p < 0.041$ ) at the second follow-up compared to baseline. Totally significant fewer ( $p < 0.041$ ) reported much pain problems at the first follow-up compared to baseline ( $p < 0.013$ ). Thus, fewer participants perceived severe pain problems at both follow-ups compared to baseline and fewer perceived severe depression problems at the second follow-up compared to baseline (Table II).

As shown in Table III, the participants reported significantly higher mean scores on the health-rating scale (0-100), which reflects the self-perceived health state, at both the first follow-up ( $t = -2,561$ ,  $df = 34$ ,  $p < 0.015$ ) and the second follow-up ( $t = -2.716$ ,  $df = 35$ ,  $p < 0.010$ ) compared to baseline. For female participants the health-rating scale showed significantly higher mean values at both the first follow-up ( $t = -2.907$ ,  $df = 15$ ,  $p < 0.011$ ) and the second follow-up ( $t = -3.394$ ,  $df = 16$ ,  $p < 0.004$ ) compared to baseline. Both men and women rated their health as better at both follow-ups compared to baseline, the change was greatest for women.

**Table II** EQ-5D baseline, follow-up 1, follow-up 2 – men, respectively, women

EQ-5D	Total 39	Baseline n (%)		(n = 39) Follow-up 1 n (%)			Follow-up 2 n (%)		
		Men (n = 21)	Women (n = 18)	Total 39	Men (n = 21)	Women (n = 18)	Total 39	Men (n = 21)	Women (n = 18)
<i>Mobility</i>									
No problems	7 (18.9)	5 (25.0)	2 (11.8)	13 (36.1)	8 (40.0)	5 (31.3)	12 (30.8)	7 (33.3)	5 (27.8)
Some problems	29 (78.4)	14 (70.0)	15 (88.2)	22 (61.1)	12 (60)	10 (62)	27 (69.2)	14 (66.7)	13 (72.2)
Much problem	1 (2.7)	1 (5.0)	0 (0)	1 (2.8)	0 (0)	1 (6.3)	0	0	0
<i>Hygiene</i>									
No problems	30 (85.7)	16 (82.5)	14 (77.8)	27 (79.4)	14 (77.8)	13 (81.3)	32 (82.1)	17 (81.0)	15 (83.3)
Some problems	5 (14.3)	3 (17.6)	4 (22.2)	6 (17.6)	4 (22.2)	2 (12.5)	6 (15.4)	3 (14.3)	3 (16.7)
Much problem	0	0	0	1 (2.9)	0	1 (6.3)	1 (2.6)	1 (4.8)	0
<i>Activities</i>									
No problems	9 (24.3)	7 (35.0)	2 (11.8)	6 (17.1)	3 (15.8)	3 (18.8)	13 (33.3)	9 (42.9)	4 (22.2)
Some problems	20 (54.1)	7 (35.0)	13 (76.5)	22 (62.9)	12 (63.2)	10 (62.5)	23 (59.0)	11 (52.4)	12 (66.7)
Much problem	8 (21.6)	6 (30)	2 (11.8)	7 (20.0)	4 (21.1)	3 (18.8)	3 (7.7)	1 (4.8)	2 (11.1)
<i>Pain</i>									
No problems	3 (7.9)	1 (5.0)	2 (11.1)	4 (11.1)	2 (10.0)	2 (12.5)	3 (7.7)	2 (9.5)	1 (5.6)
Some problems	17 (44.7)	11 (55.0)	6 (33.3)	24 (66.7)	11 (55.0)	13 (81.3)	29 (74.4)	16 (76.2)	13 (72.2)
Much problem	18 (47.4)	8 (40.0)	10 (55.6)	8 (22.2)	7 (35.0)	1 (6.3)	7 (17.9)	3 (14.3)	4 (22.2)
<i>Depression</i>									
No problems	5 (13.2)	2 (10.0)	3 (16.7)	5 (13.9)	2 (10.0)	3 (18.8)	7 (18.9)	4 (20.0)	3 (17.6)
Some problems	16 (42.1)	10 (50.0)	6 (33.3)	18 (50.0)	10 (50.0)	8 (50.0)	24 (64.9)	11 (55.0)	13 (76.5)
Much problem	17 (44.7)	8 (40.0)	9 (50.0)	13 (36.1)	8 (40.0)	5 (31.3)	6 (16.2)	5 (25.0)	1 (5.9)



**Table III** VAS at baseline, follow-up 1 and follow-up 2, total and divided by sex

	Baseline HPIC (SD) (n = 39)	Follow-up 1 HPIC (SD) (n = 39)				Follow-up 2 HPIC mean (SD) (n = 39)			
			t-test	df	p		t-test	df	p
Total	43.84 (22,720)	52.00 (21,835)	-2,561	34	<0.015*	55.42 (19,319)	-2,716	35	<0.010**
Male n = 21	44.15 (25,613)	48.95 (23,545)	-1,404	18	<0.177	51.75 (19,553)	-1,108	18	<0.282
Female n = 18	43.50 (19,998)	55.63 (19,738)	-2,907	15	<0.011	58.24 (19,431)	-3,394	16	<0.004

Notes: \*Significance for total at baseline and follow-up 1 ( $t = -2.561$ ,  $df = 34$ ,  $p < 0.015$ ); \*\*Significance for total at baseline and follow up 2 ( $t = -2.716$ ,  $df = 35$ ,  $p < 0.010$ )

#### Assessment of sleep and recovery at baseline, follow-up 1 and follow-up 2

Male participants experienced significantly less sleeping problems over time. Nightmares were experienced significantly more seldom and so was trouble staying awake during the day.

Response options for sleep issues were; 1 = never, 2 = no/few times per year, 3 = several times per month, 4 = one to two times per week, 5 = three to four times per week and 6 = five times or more per week.

Results indicated that the male participants' sleep improved significantly both from baseline (mean value 5.14) to the first follow-up (mean value 4.25) ( $t = 3.407$ ,  $df < 16$ ,  $p < 0.004$ ) and from baseline to the second follow-up ( $t = 2,171$ ,  $df = 16$ ,  $p < 0.045$ ). The women reported an improvement between baseline (mean value 4.17) and the first follow-up (mean value 3.87) but the change was not significant ( $t = 2.133$ ,  $df = 12$ ,  $p < 0.054$ ).

Four out of ten (43 percent) of the participants were suffering from nightmares initially compared with 33 percent at both follow-ups 1 and 2. Among all participants, little more than one-third (36 percent) had problems with falling asleep in the daytime always or quite often at baseline compared to 23 percent at follow-ups 1 and 2 but the changes were not significant.

Men experienced a greater positive improvement over time than women regarding perceived nightmares, though there were no significant differences between nightmares at baseline and follow-up 2, either at total level or between the sexes, nor between baseline and follow-up 1.

#### Correlations

*Correlations between disturbed sleep index and EQ-5D and VAS scale.* The more problems there were with mobility, activities, pain and depression, the more the sleeping problems. The more sleeping problems there were, the lower the self-assessments on the health-rating scale (Table IV).

**Table IV** Disturbed sleep index and awakening difficulties index; baseline, follow-up 1 and follow-up 2, gender perspective (1 = never, 6 = always)

(n <sub>1</sub> -n <sub>3</sub> = 39)	Baseline	Follow-up 1	Follow-up 2
<i>Disturbed sleep, mean</i>			
Men (n = 17)	5.14 (1,191)	4.25 (1,346)*	4.31 (1,277)***
Women (n = 16)	4.17 (1,471)	3.87 (1,316)**	4.12 (1,276)
Total			
<i>Awakening difficulties, mean</i>			
Men	4.58 (1,004)	4.33 (0,882)	4.31 (1,250)
Women	4.00 (1,491)	3.53 (1,146)	3.82 (1,152)
Total	4.35 (2,227)	4.01 (1,052)	4.05 (1,081)

Notes: \*Significance between pre- and follow-up 1: men;  $t = 3,407$ ,  $df = 16$ ,  $p < 0.004$ ; \*\*significance between pre- and follow-up 1: women;  $t = 2,133$ ,  $df = 12$ ,  $p < 0.054$  (tendency); \*\*\*significance between pre- and follow-up 2: men;  $t = 2,171$ ,  $df = 16$ ,  $p < 0.045$

As shown in Table V, there were several significant correlations with respect to the studied variables. The disturbed sleep index was significantly positively correlated with mobility (at baseline 0.361,  $p < 0.036$ , and at the second follow-up 0.468,  $p < 0.003$ ); activities (at baseline 0.473,  $p < 0.005$ , first follow-up 0.339,  $p < 0.054$  and second follow-up 0.324,  $p < 0.047$ ); pain (at baseline 0.348,  $p < 0.004$ , first follow-up 0.407,  $p < 0.017$  and second follow-up 0.490,  $p < 0.002$ ); depression (at baseline 0.470,  $p < 0.005$ , and at second follow-up 0.591,  $p < 0.000$ ); and significantly negatively correlated with the health-rating scale (at baseline  $-0.457$ ,  $p < 0.007$ , and at second follow-up  $-0.633$ ,  $p < 0.000$ ).

The data show that disturbed sleep was usually accompanied by nightmares. There were strong significantly positive correlations between disturbed sleep index and nightmares at baseline, 0.570,  $p < 0.000$ , first follow-up, 0.713,  $p < 0.000$  and second follow-up, 0.589,  $p < 0.000$ .

The results show that the more nightmare problems there were, the lower were the ratings on the health-rating scale. There were significantly negative correlations between health-rating scale and nightmares (at baseline  $-0.294$ ,  $p < 0.073$ , and at second follow-up  $-0.594$ ,  $p < 0.000$ ).

### Qualitative findings

*Which types of question did the content of HPIC elicit among the participants?* During lessons with clinicians, the participants asked many questions. Some had the nature of questions to gain knowledge, some had the nature of expressing options and attitudes and some were of an intimate character.

*Questions to gain knowledge.* Many questions to do with pain were about headaches and the positive and negative impacts of painkillers.

There were also in-depth questions about problems with blood pressure, heart problems, diabetes, diet and physical therapy. The dentist was asked about dental health, costs, insurance, what is applicable in various instances, questions about specific products like snoring rail, fluoride rinses, dental regulations and bridges.

Typical questions to gain knowledge were about the process of flight and whether such experiences lead to changes in your personality and in your body. Could muscle tension make you unable to move and exercise as before and why is analgesic medication often the only help you get from the physician?

In particular the licensed psychologist was asked about stress, palpitations, mental health problems and hereditary factors, antidepressant medication, the good memories and traumatic memories. A high level of questions and time for the psychologist concerned the area of sleep, nightmares, flashbacks, problems with concentration and a need for advice about how to help themselves and their children with similar problems.

*Expressions of opinions and attitudes.* Questions that expressed options and attitudes included the need for routines and activities in the new society and help to live according to them. Due to inactivity in Sweden, memories come up all the time and the TV news recalls the daily turbulence in the home countries.

<b>Table V</b> Correlation between disturbed sleep index and EQ-5D (significance and correlation coefficient, Spearman)			
	Baseline n = 39	Follow-up n = 39	Follow-up 2 n = 39
Mobility	0.361* $p < 0.036$	0.304	0.468** $p < 0.003$
Hygiene	0.294	0.302	0.318
Activities	0.473** $p < 0.005$	0.339 $p < 0.054$	0.324* $p < 0.047$
Pain	0.348* $p < 0.044$	0.407* $p < 0.017$	0.490** $p < 0.002$
Depression	0.470** $p < 0.005$	0.293	0.591** $p < 0.000$
VAS	$-0.457$ ** $p < 0.007$	$-0.278$	$-0.633$ ** $p < 0.000$

**Notes:** \*Correlation is significant at the 0.05 level (2-tailed). \*\*Correlation is significant at the 0.01 level (2-tailed)

A majority of participants suffered from diseases and needed treatment, but they expressed a lack of trust in the Swedish health care system, which they found difficult to access. Some of them expressed dissatisfaction with physicians only giving them sleeping pills for insomnia. They argued that this was not adequate, it was not enough. Many commented on and recognized themselves in the description of having intrusive thoughts, memory problems and avoidance of activities that could hurt. Participants asked themselves how they could live with those dark memories, with sleeplessness and nightmares and images of fallen comrades, friends and family. Several participants had problems with various feelings that frightened them. They suffered from the stress of not knowing whether they would receive further help after HPIC. Participants also gave examples of military events that had caused them permanent damage. Some participants were somewhat annoyed with "friendly people" who tried to reassure them by saying that their reactions were common and completely normal in a situation like theirs. But they underlined that what they needed in the first place was more useful advice and practical help.

*Intimate questions.* Examples of intimate questions were about the transmission of sexual diseases during pregnancy, how to get the test for prostate cancer and questions about contraception.

One participant suggested that HPIC should include knowledge about sex, sexual relationships and sexually transmitted infections. That is an issue that is not talked about in their cultures and it is even difficult for a woman to talk about it with her own husband. There are many problems among married couples that should be highlighted but these issues must have their own context.

*What comments do participants leave about the setup of HPIC?* Most comments were about the lecturers', coordinators' and professional interpreter's efforts and the content of health promotion education in dialogue. This was generally seen as particularly beneficial. The premises and the surrounding environment were perceived as good except by one participant who had been imprisoned in a similar room.

As regards unmet needs, some participants would have preferred to begin an hour later because of sleeping difficulties and some would expand the HPIC to twice a week with the same content in order to get an even better understanding. Some wanted more time and help in learning how to concentrate.

Advice for the future included being followed up as individuals and that the HPIC should be continued. There was also a proposal to extend the project so that more people can participate.

*What areas does HPIC seem to cover and what is missing for the participants?* The majority of participants thought that all the themes were substantively very good, fruitful and beneficial for those who are newcomers. Many also emphasized relaxation exercises and other exercises as extremely useful. The course had given them an understanding of how the Swedish health care system and the regulatory system work. Participants also underlined respectful treatment from the teachers, coordinator and professional interpreter as very valuable.

Several participants expressed in the evaluations that they wanted more time and more occasions for HPIC. The course could be fleshed out with more knowledge of the body, such as eyes, abdomen, gynaecology and first aid in emergencies. Some would like to extend and expand the course to include traditions, habits and outlook on the future. There were also requests for excursions into the countryside or to new areas in the city and to have documentary support in the lessons.

*What would participants communicate to policy makers and managers of various social activities?* The participants clearly expressed the wish that the coordinator and the teachers in HPIC pass on the participants' issues and needs to policy-makers and politicians. Many participants had experienced difficulties in obtaining access to care; they had not understood how to proceed and had problems with long waiting lists. They also mentioned a shortage of interpreters and sufficient time for interpretation in health care.

The participants expressed problems with integration in Swedish society, including the labour market, and several commented on the need to get help from the Swedes to integrate, but this was obviously problematic in that they come from a culture that is much more group-oriented than in Sweden (individualistic).

Some participants were concerned about their managers not continuing to provide help after HPIC. They were afraid of being forgotten as individuals and they knew for certain that they were in need of continuing assistance. Certain administrators' expertise in this area was questioned and a wish was expressed to be judged by a clinical specialist instead. Many participants suggested that all information and knowledge provided in the HPIC should be disseminated to all who attend SFI training since everyone benefits from it.

## Discussion

Our study shows that the health promotion intervention in the first stage of resettlement is useful in terms of HRQoL and knowledge of the health care system.

The responses to four of the five health state issues (mobility, main activities, pain/discomfort and anxiety/depression) were significantly associated with the disturbed sleep index. There were also significant associations between the disturbed sleep index and nightmares and between the health-rating scale and nightmares. This indicates that the identification of sleeping problems should be a mandatory part of an early medical examination of newly arrived refugees.

The results also show that a majority of the participants describe stress, diseases and treatment needs, but also a lack of trust in the Swedish health care system because of problems with getting access to it and a lack of professional interpreters when needed.

These findings are alarming when you consider that these people are expected to carry out 40 hours of work per week, consisting of language study, community information and practice in the workplace. Moreover, as a majority of the participants are parents to on average three children, the gap between their needs and the challenges they face in the new Swedish society seems very large.

On the other hand, the results also suggest that with a relatively small investment, society can accomplish significant changes.

There are changes over time and the participants' perceptions of their health and quality of life in four of the five EQ-5D variables had significantly improved after the HPIC. Even sleep and recovery problems were perceived as less difficult after the course and the second follow-up. In some of the fields/variables (pain and depression) there was still a significant improvement at the second follow-up. It is notable that these variables were those which the participants had estimated as most problematic at baseline. General health at both follow-ups was perceived as significantly better than at baseline. In terms of gender, the female participants made the most positive changes except for sleeping problems, where men over time reported less sleeping disturbances than women. Out of 65, 39 (60 percent) responded to the second follow-up's postal survey, which may be considered acceptable as this group has high mobility in the housing area.

In keeping with Mollica *et al.* (2004), we found that victims of war trauma and torture are affected by talking about their experiences. Many who have experienced war trauma and torture seem to appreciate the opportunity to testify to their experiences both by filling in questionnaires and by sharing them with others in similar situations. According to Silove (1999), the structure and content of HPIC appear to have contributed to a sense of security, less stress and better perceived health.

The results of this study show that prior to the course, participants in the HPIC perceived their health status as problematic. Compared to a corresponding group of newly arrived Iraqis with residence permits (Sundell Lecerof, 2010), our participants estimate their health as considerably worse. Sundell Lecerof (2010) used the same instrument, EQ-5D, in her survey of newly registered (for the period December 2007 to February 2008) Iraqis in

Sweden. The questionnaire was answered by men and women aged 18-64 years, mean age 37 years. In her study (compared to ours), no mobility problem at baseline was reported by 74 percent (vs 19 percent), no self-care/hygiene problem by 98 percent (vs 86 percent), no activity problem by 80 percent (vs 24 percent), no pain problem by 44 percent (vs 8 percent) and no anxiety/depression problem by 40 percent (vs 13 percent). Our results indicate that the Arabic-speaking refugees included in the current study experience themselves as far more overloaded with ill health than those who responded to the Swedish postal questionnaire. This is also reasonable since the postal questionnaire was sent to all newly arrived Iraqis, regardless of health problems, whereas HPIC approached those who perceive a need for more health education. A similar study (Ekblad *et al.*, 2012) with HPIC during five weeks for newly arrived Arabic-speaking refugees found much the same levels of no problems as in the present study.

The EQ-5D has been widely used in population health surveys all over the world (Szende and Williams, 2004; Luo *et al.*, 2005). Like ours, those studies concluded that refugees often show more ill health than the indigenous population. Results from two population surveys in Sweden using the EQ-5D found that health was better among Swedish-born compared to immigrants (Eriksson and Nordlund, 2002; Burström and Rehnberg, 2006). In her dissertation, Ohinmaa (2006) studied the HRQoL of a group of immigrants and refugees who utilized the services of multicultural health brokers in Alberta, Canada. She found that 65 percent of the subjects had moderate or extreme problems in the anxiety or depression dimension of the EQ-5D index and these problems were more prevalent among refugees ( $p < 0.001$ ). The author concluded that there is a requirement for targeted mental health programs and cultural mediators to respond to the health needs of immigrants and refugees. Participants in our study experienced even worse problems (87 percent experienced moderate or extreme anxiety/depression problems) than those in the Ohinmaa (2006) study.

To our knowledge, apart from an on-going study in Södertälje (Ekblad *et al.*, 2012), there are no study found investigating EQ-5D and including one or two follow-ups. A methodological limitation in our study is the absence of a control group; this was neither practical nor ethically justifiable in this concept. Another limitation is the small size of the study group and that we do not have insight into other aspects of the participants' life situation; we cannot say for certain that the changes are a consequence of the current intervention.

One limitation in the qualitative part of our study is that only information from those who asked questions is available. Another relates to the use of research data translated by a professional interpreter, since earlier studies have found problems in translated research data (Ingvarsdotter *et al.*, 2010).

On the other hand, a strength of our study could be that it uses established instruments and methods, both quantitative and qualitative. Another strength is that the participants were followed over time and all information and communication was translated into their native language.

According to the participants' qualitative course evaluations, the HPIC had a very positive impact on them in terms of pure factual knowledge and general health. Tengland (2006) states that changing individuals' health-related beliefs and knowledge through information is a way of changing the individuals' inner welfare, which in turns leads to the individuals acting in ways that improve their HRQoL.

### ***Conclusion and implications***

Migrants' health is a human rights and empowerment issue; moreover, healthy migrants will become productive members of the community. In this study, we have seen the importance of self-care strategies and the possibility of helping refugees to improve their self-perceived health and quality of life. There is a consensus in the development of the participants' self-rated health and quality of life and in their evaluation of participation in the HPIC.

In view of these findings, we want to make the following suggestions:

- As migrants face specific difficulties with respect to their right to health, it is important that education/training in medicine, health care and social work provide cultural competence.

- The host country should include evidence-based knowledge in the refugee reception programme, and establish a Health Promotion Course for newly arrived refugees (like the HPIC) in the first stage of resettlement in order to take care of their own health in the best manner and gain knowledge of the health care system.
- It is important that health promotion interventions are guided by trained medical personnel.
- To provide migrants with a refugee background with an early contact with health care, which is important for successful establishment; local actors need to develop an approach for cooperation that is effective and quality assured.
- As lack of language skills can be a major barrier to understanding bureaucratic procedures and the functioning of the health system, it is necessary that society provides sufficient numbers of adequately trained professional interpreters when needed.
- The lack of attention to perceived health, quality of life and health-promoting strategies as a basis for integration and establishment is still discriminatory and further research in this area is required.

## Note

1. IntroRehab offers introductory and rehabilitation efforts for refugees and immigrants who suffer from PTSD or from mental and physical symptoms as a result of experiences related to war, torture and other traumatic life events.

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