

# Exploring the potential of health promotion for recently settled migrants in Sweden

SUSANNE SUNDELL LECEROF | FACULTY OF MEDICINE | LUND UNIVERSITY





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**LUND**  
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DOCTORAL DISSERTATION

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| <b>Abstract</b><br><p><b>Aims:</b> This thesis aims to explore the role of social determinants for health among recently settled migrants in Sweden, to evaluate the impact on health of an intervention targeted at this group, and to discuss implications for health promotion practice.</p> <p><b>Methods and materials:</b> Questionnaires were sent in May 2008 and May 2010 to all recently settled adult Iraqi migrants in eight counties in Sweden. Baseline data were used in Papers I and II, both cross-sectional studies. Paper III was a prospective cohort study and baseline and follow-up data were used. Data were analyzed by multivariate logistic regressions. For Paper IV, ten refugees from the Middle East were interviewed individually. Data were analyzed by qualitative content analysis.</p> <p><b>Results:</b> Paper I showed that associations between having received information on healthy diet and physical exercise and reduced risk of overweight were modified by educational level, such that associations were especially pronounced among persons with high educational level. In Paper II, it was shown that there were associations between poor mental health and a) financial difficulties, b) housing problems (and c) experiences of discrimination. Social capital modified these associations such that risk of poor mental health decreased when social capital was high. Paper III showed that persons in the International Health Advisors (IHA) intervention group reported having received information on healthy diet and physical activity to a larger extent than the control group, but that there were no differences regarding health status, unmet health needs or social capital. In Paper IV, five analytical categories were developed: Starting in a social void may be inevitable; Family relations as support or burden; Taking own initiatives is demanding; Maintaining interactions with others comes with a price; and Growing new roots takes time. One theme also emerged: Social participation helps coping with despair and gives hope for stability.</p> <p><b>Conclusions:</b> Social determinants play important roles in creating health and disease and in strengthening resilience against factors harmful for health. Health information is a human right. However, systematic planning and development of a theoretical base is needed for addressing health problems and underlying causal mechanisms more effectively. Enabling active social participation may be a way of promoting mental health, but this needs to be researched further in the future.</p> |   |                               |
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# Abstract

This thesis aims to explore the role of social determinants for health among recently settled migrants in Sweden, to evaluate the impact on health of an intervention targeted at this group, and to discuss implications for health promotion practice. Questionnaires were sent in May 2008 and May 2010 to all recently settled adult Iraqi migrants in eight counties in Sweden. Baseline data were used in Papers I and II, both cross-sectional studies. Paper III was a prospective cohort study and baseline and follow-up data were used. Data were analyzed by multivariate logistic regressions. For Paper IV, ten refugees from the Middle East were interviewed individually. Data were analyzed by qualitative content analysis. Paper I showed that associations between having received information on healthy diet and physical exercise and reduced risk of overweight were modified by educational level, such that associations were especially pronounced among persons with high educational level. In Paper II, it was shown that there were associations between poor mental health and a) financial difficulties, b) housing problems and c) experiences of discrimination. Social capital modified these associations such that risk of poor mental health decreased when social capital was high. Paper III showed that persons in the International Health Advisors (IHA) intervention group reported having received information on healthy diet and physical activity to a larger extent than the control group, but that there were no differences regarding health status, unmet health needs or social capital. In Paper IV, five analytical categories were developed: *Starting in a social void may be inevitable*; *Family relations as support or burden*; *Taking own initiatives is demanding*; *Maintaining interactions with others comes with a price*; and *Growing new roots takes time*. Based on these categories an overarching theme was developed: *Social participation helps coping with despair and gives hope for stability*.

Social determinants play important roles in creating health and disease and in strengthening resilience against factors harmful for health. Health information is a human right. However, systematic planning and development of a theoretical base is needed for addressing health problems and underlying causal mechanisms more effectively. Enabling active social participation may be a way of promoting mental health, but this needs to be researched further in the future.



# Original Papers

This thesis is based on the following Papers:

- I **Sundell Lecerof S**, Westerling R, Moghaddassi M, Östergren P-O. Health information for migrants: The role of educational level in prevention of overweight. *Scandinavian Journal of Public Health*, 2011; 39: 172–178.
- II **Sundell Lecerof S**, Stafström M, Westerling R, Östergren P-O. Does social capital protect mental health among migrants in Sweden? *Health Promotion International*, 2015: 1–9.
- III **Sundell Lecerof S**, Stafström M, Emmelin M, Westerling R, Östergren P-O. Findings from a prospective cohort study evaluating the effects of International Health Advisors' work on recently settled migrants' health. (*Submitted*)
- IV **Sundell Lecerof S**, Emmelin M. Refugees' experiences of social participation and its meaning for mental wellbeing – a qualitative study from southern Sweden. (*Manuscript*)

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Paper I Sage Publications

Paper II Oxford University Press

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# Introduction

Migration is a perpetual aspect of human existence. Populations have migrated for various reasons – to find land for cultivation or herding animals, to build trading relationships, to explore the unknown, or to escape drought, resource scarcity, harsh climate or natural disasters, and persecution and armed conflict. The last category of migrants is better known as refugees and asylum seekers who seek international protection. The United Nations High Commissioner for Refugees defines a refugee as a person who *“owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it”* (UNHCR, 1967).

International refugee flows have become a considerable proportion of global migration since World War II. Currently, there are approximately 250 million migrants in the world, and among these, an estimated 60 million people are forcibly displaced outside their own countries. More than 80% of the world’s refugees flee to a low or middle country (FORES, 2015). The global refugee situation during the last decade has been dominated by crises and political instability in the Middle East (UNHCR, 2015) following in the wake of the US-led invasion of Iraq after the 9/11 terrorist attacks at the World Trade Center in New York, resulting in refugees from Iraq and Afghanistan. In addition, the civil uprising movement known as the Arabic Spring, in the aftermath of which refugees started to leave Syria, and the ongoing and outbreaks of armed conflicts in, for example, Burundi, Congo, and Ukraine, have also led to large numbers of refugees world-wide. During the last four years, the global population of refugees has increased by 45% (4.7 million persons), which is mainly due to the situation in Syria (ibid). The majority of Syrian refugees have remained in the geographical vicinity – 1.8 million refugees in Turkey, 1.2 million in Lebanon and about 600 000 in Jordan. The number of Syrian refugees coming to Europe increased rapidly in 2015 (ibid).

In Europe, currently, there are approximately 3.5 million refugees. The largest groups currently are from Syria, Afghanistan, and Somalia (ibid). The number of asylum seekers has also increased over the last few years. During 2015, there was a

sharp increase in individuals seeking international protection in Europe. Asylum seekers were mainly from Albania, Afghanistan, Iraq and Syria.

Sweden has been one of the countries with the most liberal immigration policies (Huddleston et al., 2015), allowing 15 refugees per 1000 inhabitants, one of the highest rates in Europe (UNHCR, 2015). During 2015, 163 000 asylum seekers came to Sweden, which is more than double compared to the year before (Swedish Migration Board, 2016). The largest groups were stateless asylum seekers and persons from Syria, Iraq and Afghanistan (ibid).

Sweden has a long-standing tradition of using migration as a vehicle for economic development. For example, the German Hansa had a great influence on trade also here in Northern Europe during the period between 1200 and 1500. Immigration also increased during the 17<sup>th</sup> century, when Vallons, known for their expertise in iron handling, immigrated (Schön, 2000). This contributed to flourishing ironworks in the 17<sup>th</sup> and 18<sup>th</sup> centuries, when Sweden exported iron in large scale to, for example, the Netherlands and England (ibid). During the 19<sup>th</sup> century, net emigration was larger than net immigration due to poverty and several years of failed crops. During World War II, Sweden received a smaller share of refugees from Nazi Germany and its occupied countries and later also from Norway and Denmark (Swedish Migration Board). After the war, around 70 000 Finnish children were evacuated to Sweden due to Finland's war with Russia. During these turbulent times, the Scandinavian countries changed their immigration policies towards more restrictive ones. In Sweden, many civil organizations prepared to assist the refugees when they arrived. From the mid-1900s, immigration increased due to labor market demands. The first larger refugee groups from outside Europe arrived in Sweden in the 1970s from Chile and later from Iran. Since the 1980s, refugees and family reunion cases have been the largest category of immigrants in Sweden. The Balkan conflicts generated a large influx of refugees in the 1990s. Since the 9/11 terror attacks on World Trade Center in New York and the subsequent US "War against terror", and later, the Arabic Spring civil uprising, immigration flows have been characterized by an escalating number of refugees from and in Afghanistan and the Middle East. Currently, the largest groups of asylum seekers are from Syria, Afghanistan and Iraq (Swedish Migration Board, 2016). The current international refugee crisis due to armed conflict in Syria, combined with increasing sympathy for xenophobic and populist parties in Europe, led to changes in the Swedish migration policy during 2015. The borders are temporarily closed and restrictions in immigration and integration policies have been announced.

To be a refugee is associated with many health hazards. During the first period of stay in a new country, there may be many health needs, both physical and mental, that have not been addressed. At the same time, there may be several barriers to

services among recently settled refugees – such as language barriers and lack of trust in authorities.

Migrant groups, and particularly refugees, have been shown to suffer from poorer health outcomes compared to native European populations. For example, studies have shown that migrants have higher morbidity (Jervelund et al., 2016) and even mortality (Albin et al., 2006) than the native population in some European countries. It has also been shown that refugees suffer from poorer mental health (Fazel et al., 2005, Lindert et al., 2009, Norredam et al., 2009). Despite health needs, migrant groups and refugees also utilize health care to a smaller extent than do native Europeans (Lindert et al., 2008, Norredam et al., 2010). Studies in Sweden have also shown poorer physical and mental health status and health care utilization among migrant groups, particularly refugees (Albin et al., 2006, Hjern, 2012, Ingvarsdotter, 2011, Ivert, 2013).

According to the Declaration of Human Rights, the highest attainable level of health is a fundamental human right. The right to health information is also declared in the same paragraph (OHCHR and WHO, 2008). The level of health inequities between native Europeans and migrant groups and refugees is therefore unacceptable. It has been proposed that part of the health inequities are accounted for by low levels of health literacy, because this may result in difficulties finding, understanding and applying health information (Wangdahl et al., 2014). Refugees may also avoid seeking healthcare due to lack of trust (ibid). Health systems in some of the refugees' home countries may be less advanced, and young refugees may miss out on health education in school regarding, for example, sexual and reproductive health and rights, due to migration (Flodström, 2011).

Many interventions have been implemented in order to promote health, prevent disease or to improve health literacy among migrants and refugees. In Sweden, such interventions are frequently devised, but more seldom based on theoretical understanding, systematic assessment of target group and needs, analysis of causal mechanism, and scientific evaluation. This doctoral thesis will address health needs among recently settled migrants and refugees in Sweden, factors that explain them, and social determinants of health that play important roles in either increasing risk or in protecting health. The studies are discussed in the wider context of health promotion and theory.



# Aim and objectives

The overall aims of this thesis are to contribute to a better understanding of the role of social determinants for health among recently settled migrants in Sweden, to evaluate the impact of a health information intervention targeted at this group, and to discuss the implications for health promotion practice.

The specific objectives are:

- To determine the extent to which educational level may play a moderating role in the association between health information and overweight (Paper I)
- To study how financial difficulties, housing problems and experience of discrimination are associated with poor mental health and to determine the extent to which social capital (participation and trust) may modify these associations (Paper II)
- To evaluate the impact of a health intervention for recently settled migrants on self-reported health status, health information, social participation, and generalized trust, and to determine how educational level and social capital (participation and trust) modify these effects (Paper III)
- To understand what social participation means for mental wellbeing among refugees (Paper IV)



# Background

## Study setting

Many health promotion interventions have been carried out in the field of migrant health, but few have been scientifically evaluated. In Sweden, many interventions are implemented in the context of refugee resettlement. Recently settled refugees and family members who arrive in Sweden within two years after the arrival of the initial refugee member of the family are registered at the Labor Office, and a resettlement plan is established for each refugee, in collaboration with an official. The mandatory parts of the plan are Swedish for immigrants (SFI) courses and civic information. Additionally, they may take part in health promoting activities such as health information, physical activity, and participation in NGOs. In the Scania, Östergötland, and Stockholm regions, health communication has been added to the standard set of interventions given to all recently settled refugees since the change in the resettlement policy in December 2010. In these counties, so called *International Health Advisors* (IHAs) have been employed for this purpose. The IHAs are persons who speak the native languages of the refugees and who often come from the same geographical areas, but who have settled in Sweden and speak Swedish as well. In Östergötland and Stockholm they have a professional background in the health care sector, but in Scania, they do not. However, all IHAs receive preparatory training for the special mission of providing recently settled refugees with basic health information. The most common themes are the health care system in Sweden, common illness such as flu, self-care, stress/mental health, physical activity, and healthy diet. Since the political resettlement reform, the IHAs in Scania have aspired to develop health communication, whereas the other counties are more oriented towards health care advice.

The work of the IHAs has been evaluated several times before they were permanently employed in these counties, but thus far no studies have focused on outcomes in the target groups in a controlled study, or explored possible future paths for development of the profession in a scientific study. This doctoral dissertation presents the results of a prospective cohort study, both at baseline 2008 and at follow-up 2010, and the results of a qualitative study 2015, all of which concern topics addressed by the IHAs and the social factors that might affect how successful they are in achieving their goal.

Many interventions in the migrant health field, including the IHAs, focus on individual-level behavioral factors, such as informing the target group about a specific health issue, or trying to introduce new health behaviors, such as physical activity. While access to health information and health services and interventions are a basic human right, the interventions often fail to address the intermediate and policy-level factors that powerfully shape health and health behaviors. Ultimately, recently settled refugees' health is best supported by inclusive policies and services that are made accessible in different ways. However, the challenge for practitioners remains that of ensuring the involvement of and anchorage in the communities, neighborhoods, social networks and civil organizations.

## Theoretical framework

### The concept of health

In this doctoral thesis, *health* is understood as something more than just absence of disease. This definition is often used as the standard definition of health. According to the classic WHO definition, health is

*... a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity.*

(WHO, 1948)

In the Ottawa Charter (WHO, 1986), which marked the beginning of a new era in public health, health is described as following:

*Within the context of health promotion, health has been considered less as an abstract state and more as a means to an end which can be expressed in functional terms as a resource which permits people to lead an individually, socially and economically productive life. Health is a resource for everyday life, not the object of living. It is a positive concept emphasizing social and personal resources as well as physical capabilities.*

This understanding of health and *health promotion* contributes to a more practically oriented public health theory. According to the World Health Organization (1998), the concept of health promotion is defined as

*...the process of enabling people to increase control over, and to improve their health.*

## Social determinants and ecological models of health

Many studies in the field of migrant health have evolved around the *social determinants of health*. The first scholarly critiques against a predominantly medical view on health and disease and a strictly naturalistic inquiry in research emerged in the 1970s. An ecological model of human development (in developmental psychology) was proposed by several scholars, for instance Bronfenbrenner (1977). Bronfenbrenner made significant proposals for both research methods and for understanding human development from an ecological point of view. The individual and his/her behavior were described as embedded in a social context of several systems, which affect each other. The microsystem contained the physical place and environment called setting and the activities and social interactions attached to it. The mesosystem described relations between settings, such as home, school and work, where an individual may play different and changing roles. The exosystem signified the surrounding society with its organizations and institutions and how they govern, facilitate or limit and respond to the different settings. The macrosystem captured the society's laws, norms, culture, and other intangible factors playing vital roles in how individuals behave in different settings. The social determinants of health are at the core of this doctoral thesis and constitute its contribution to practice and future research. The thesis will address the roles of social determinants of health, such as education, socio-economic factors, and social capital, in the health status of, and in health promotion interventions for, recently settled migrants in Sweden.

The first international recognition of the ecological model and the social determinants of health was in the Ottawa Charter (WHO, 1986). The social determinants of health have been described in the literature by, for example, Whitehead & Dahlgren (1991) and Marmot & Wilkinson (2006). The most famous model is the "rainbow model" by Whitehead and Dahlgren (1991), illustrating the different levels of the social determinants of health (Figure 1), and is widespread in public health research and practice. The model depicts the individual and his/her health in a societal context, where factors on different levels determine the creation or development of health. According to an ecological understanding of health, the determinants of health are not only biological factors such as gender, age or hereditary factors, or individual habits or health behaviors. On the community or social networks level, the individual's choices, habits, health and wellbeing are affected by factors such as available social support, opportunities for health-promoting activities, and characteristics of the neighborhood. General socio-economic, cultural and environmental conditions affect people's living and working conditions in areas such as studies, work, unemployment, housing, and health care services.

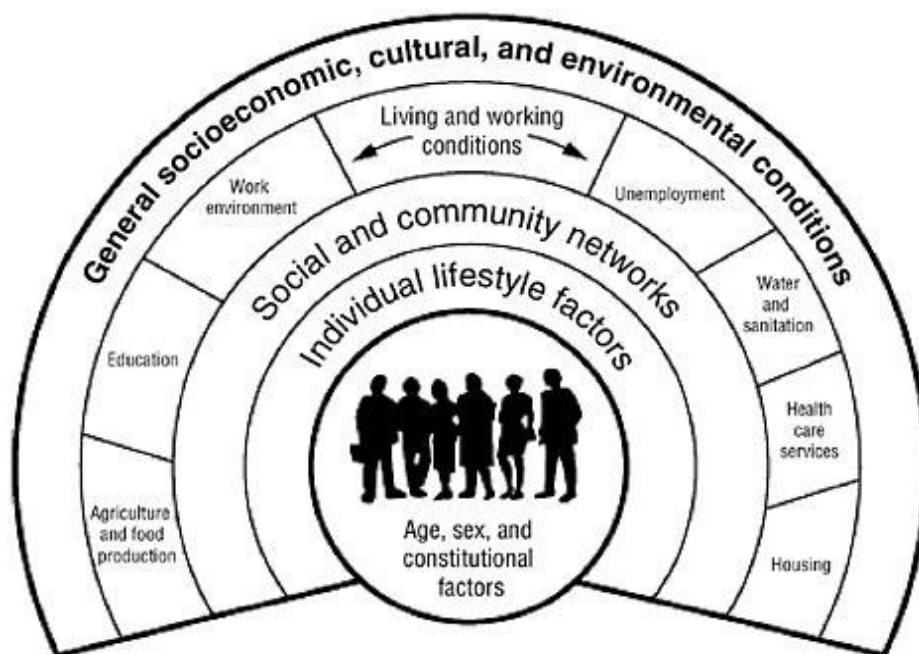


Figure 1. The social determinants of health (Whitehead and Dahlgren, 1991).

## Social capital

The concept of *social capital* was developed by the French sociologist Pierre Bourdieu and the American political scientist Robert Putnam. Bourdieu (1986) described social capital as something inherent in privileged social classes, that is, capital which can be inherited, invested in and accessed if in position. Similarly, but more based on geographical community than class, Putnam operationalized the concept as social participation and social trust. In his famous work “Bowling Alone” (Putnam, 2000), he showed that social participation in community activities created reciprocal norms, which in turn built up trust in other members of the community. This trait of communities, i.e. social capital, was associated with wealth, better school achievements, lower crime rates, and longer life expectancy in communities. Putnam’s operationalized concept has been further developed by researchers such as Szreter and Woolcock (2004), who differentiated levels of social capital – bonding, bridging, and linking. Bonding social capital refers to the resources created by common activities and mutual trust within a social group, whereas bridging social capital arises from the relationships between social groups. Linking social capital is created by participation in activities between a social group and institutions of power (for example elections or demonstrations), and by trust in these

institutions. Scholars such as Kawachi et al (2008) have applied the concept of social capital in public health, and have shown that access to social capital on both the collective and individual level can be beneficial for health. For example, studies have shown that social capital and mental health are related (Kawachi and Berkman, 2001, Ehsan and De Silva, 2015). Berkman and Kawachi (2000) have suggested that social capital may operate through two different mechanisms to affect health. One is through tangible or intangible resources that can be accessed in the social community in times of need, and the other is through social influence. The role of social capital (defined as social participation and trust in others) for recently settled migrants' health is explored in this doctoral thesis.

### **“New public health” and health promotion theory**

The “*new public health*” developed as a result of critiques during the 1970s against the focus on individual factors and “victim-blaming” in health research and practice. The Canadian Lalonde report was the first prominent national policy-guiding publication that described the importance of taking environmental factors into account in systematic public health work. In 1986, the Ottawa Charter (WHO, 1986) was written, as the first comprehensive international agreement including the social determinants of health, and it is often seen as the leading document for health promotion practice and research. The Ottawa Charter is used in this doctoral thesis as support for the critical discussion of the results and for suggestions for development of practice.

*Health promotion* focuses on enabling people to gain control over factors that affect health, a process also known as empowerment. WHO distinguishes between individual and community empowerment. Individual empowerment means increasing an individual's knowledge, skills, and abilities to take control over factors influencing his/her own health, whereas community empowerment has a larger potential to influence structural factors beyond the individual level. In health promotion, several *behavioral theories* are attempting to model how individuals make decisions and choices, and change their way of thinking and behaving. The simplest model of depicting behavioral change is known as the KAP formula (Tones and Green, 2004). It is assumed that new knowledge will lead to desired attitudes towards a targeted change. Positive attitudes will in turn lead to behavioral change. The KAP model has been criticized for being simplistic and not accounting for the social context and environmental factors that affect people in their decision-making processes, and also for failing to explain individual change processes over time. A theory adding complexity to the understanding of how health beliefs may bring about behavioral change is the *health beliefs model*, developed by Fishbein and colleagues (Nutbeam and Harris, 2004). It is assumed that people will make rational health behavior choices on the basis on what they think about the harmfulness of a

particular behavior, what they believe they are capable of doing about it, and what they know about the subsequent benefits and drawbacks of the different alternatives. New knowledge about a desired health behavior, where the benefits will outweigh the drawbacks, together with the individual's motivation will lead to positive attitudes towards the targeted change, according to this theory (Tones and Green, 2004). Positive attitudes and a cue to action will in turn lead to behavioral change. The health beliefs model has been criticized for being simplistic and not accounting for the social context and environmental factors that affect people in their decision-making processes, and also for failing to explain individual change processes over time. The latter aspect of behavioral change has been captured by Prochaska and DiClemente (Nutbeam and Harris, 2004) in the so-called *stages of change model*, or the *transtheoretical model*, where different phases in a change “cycle” are described. According to this model, people with little awareness about the need to change health behavior are in a pre-contemplation phase. The change process starts with contemplation on one's own health behaviors and on the need to change them, and with determination, which is the phase when an individual identifies barriers to behavioral change and finds that the positive consequences of behavior change outweigh the negative consequences. This is followed by a decision to change behavior and by action. Once a behavioral change has been started, the next phase is about maintaining the change, where follow-up and continuing support is needed. At relapse the cycle starts again from the contemplation phase. The theory has been criticized for disregarding the important role of environmental factors – for instance, social support and a smoke-free physical environment make it easier to maintain smoking cessation. The Canadian psychologist Albert Bandura (Nutbeam and Harris, 2004) has described individual cognition and behavioral change in a social context in his *social cognitive theory*. He highlighted the “black box” between input (e.g. health information) and the “output” (e.g. health behavior change). The mediating factors here are the individual's cognitive processes, affected by observational model learning. A certain cognition and behavior is encouraged or discouraged by positive or negative reinforcement, either directly or via a role model (vicarious reinforcement). Among these various theories, the social cognitive theory is the most modern and advanced; however, all have been applied in contemporary health promotion practice. A theory-based planning, implementation and evaluation is helpful in structuring, understanding, explaining and/or affecting reality, and even for making qualified predictions and setting goals and indicators. Few health interventions targeted at recently settled migrants/refugees in Sweden have a theoretical base. These theories are discussed in relation to the intervention that is examined in this doctoral thesis.

Against this background and theoretical framework, this thesis attempts to contribute a stronger focus on the social determinants of health in health promotion

practice among migrants and refugees, more knowledge of how health and wellbeing can be affected, and suggestions for future research.

## Earlier intervention studies on migration and health

Previous studies in the field of migrant health and its determinants can broadly be divided into three different groups: those that focus on health conditions that can be related to pre-migration factors, such as trauma and torture (Mollica et al., 2001, Lindencrona et al., 2008), those that focus on factors during the migration itself, for example hazardous conditions during travel and long asylum (Laban et al., 2004, Laban et al., 2008), and those that examine post-migration factors, such as social determinants and experiences of discrimination in the new country (Tinghog et al., 2007, Williams et al., 2012). In this doctoral thesis, the post-migration risk factors for poor mental health are in focus. Deterioration of health due to post-migration factors is preventable, or can at least be predicted and thereby modified through protective factors. In the following section, previous studies on migrant health, interventions, and social determinants that modify the effects of post-migration risk factors for health are reviewed.

Educational level has both a direct and an indirect relationship with health. High educational level can make it easier for people to seek, understand, and assess information concerning health, and may be a status marker that gives easier access to beneficial contacts, services and safety, for example, through insurance or equipment (Furnée, 2008). Educational level may therefore play an important role in how recently settled migrants cope with the major life changes and adaptation to a new context while resettling in the new country.

Tinghög and colleagues (2007) showed in their study that poor mental health among migrants could be explained by socioeconomic status in the new country. They had less access to financial buffers than the general population in Sweden and therefore suffered from economic stress. The authors concluded that socioeconomic disadvantage explained the largest part of the higher burden of poor mental health among migrants in their study. These studies show that socioeconomic status plays an important role in health inequalities between migrant groups and the native populations in a large part of Europe.

Social capital is another social determinant (Marmot and Wilkinson, 2006) that has been explored in many studies in the public health field. Epidemiological studies have shown that poor social capital is associated with higher mortality (Ejlskov et al., 2014, Sundquist et al., 2014, Nieminen et al., 2015) and morbidity in different diseases (Kawachi et al., 2008). According to Putnam (2000), mutual trust is a result

of active social participation where common norms of reciprocity are shaped. Social participation is also a way of creating feelings of belonging and shaping identity, as demonstrated by Harris and colleagues (2014), who studied refugees' experiences of a community food gardening project. Jenkinson and colleagues (2013) showed in their literature review and meta-analyses of experimental and cohort studies that volunteering in civil organizations had positive effects on health and survival. Persons who were socially active through volunteering had suffered less from depression, had higher life satisfaction, and lower mortality than the control groups. Watanabe and colleagues (2004) showed that social support from extended family and social participation reduced depressive symptoms in older adults who had been displaced in Taiwan due to earthquake. These studies indicate that deliberate attempts to build social capital by promoting social participation may be a good way of promoting social, mental, and even physical health, as well as survival among recently settled migrants.

Many interventions have been implemented that target migrant groups. Some of them were culturally and linguistically adapted to the target group, such as one intervention in Norway (Helland-Kigen et al., 2013, Raberg Kjøllesdal et al., 2011) and peer education interventions with “promotoras” (Albarran et al., 2014, Tran et al., 2014) for Latino immigrants in the US. The interventions in Norway that were culturally adapted to Pakistani women with low educational level resulted in increased motivation to change dietary patterns and increased knowledge about risk factors for diabetes. The studies evaluating the “promotoras” work showed that participants became more motivated to implement lifestyle changes (Albarran et al., 2014) and that they improved self-care strategies in terms of mental health (Tran et al., 2014). Despite being a popular strategy in practical health promotion, peer education has also been criticized. A critical examination of peer education by Turner and Shepherd (1999) identified problems such as limited representativity of the peer educator for the target group, power imbalance between the peer educator and the target group, and lack of trust by members of the target group in the peer educator, which call for attention. When peer education is applied in migrant and refugee groups, the need is often pragmatic (due to language barrier), but these issues may remain unaddressed.

Other types of interventions typically involve some kind of community empowerment and action in so called “ethnic communities”. This kind of intervention is rooted in the ecological model and addresses different levels of the social determinants of health. O’Driscoll and colleagues (2014), for instance, identify four groups of correlates of physical activity and sport in “culturally and linguistically diverse (CALD) migrant populations” (p. 515) in their systematic literature review. With a social ecological model of health as a framework for their literature review, the authors identified acculturation, demographic, psychosocial, and environmental or organizational factors as important determinants of physical

activity. The authors define acculturation according to Redfield and colleagues as: *'... those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups'* (p. 516), and use the term broadly, not only encapsulating cultures of persons originating from different regions than the one they live in, but also that of refugees, who have specific common experiences related to migration and length of residence in the new country. Demographic factors included age, gender, employment, and education; psychosocial factors referred to, for example, religious and cultural norms, family commitments and social support; and environmental or organizational factors were, for example, access to information and safety aspects. Caperchione and colleagues (2009) also investigated CALD communities in order to identify barriers and enablers of physical activity and sport. They found cultural and religious beliefs, issues with social relationships, socioeconomic challenges, environmental barriers and perceptions of health and injury as barriers. The need for cultural sensitivity, provision of education sessions addressing health behaviors, encouraging participation of individuals from the same group, exploration of employment situational variables, and implementation of "health action zones" were found as potential enablers. Another community-based approach for reaching, for example, socioeconomically disadvantaged migrant groups described in the literature is Freirian popular education, also known as empowerment education (Tones and Green, 2004). This approach focuses on active participation of the "target group", increasing equity through active participatory learning and creating "critical consciousness". A systematic review of popular education intervention studies by Wiggins (2012) showed that this approach was effective in empowering people and promoting health. Community-based health interventions are situated in the living environments, where people "learn, work, play and love" (WHO, 1986), which makes the interventions more accessible and which addresses the social determinants in everyday life that affect health. The living situation of recently settled migrants, especially refugees, calls for attention to the social determinants of health and systematic needs assessment, solution formulation, intervention planning, implementation, and follow-up with full target group involvement, active participation, and empowerment. The two types of approaches presented above will be discussed further in the discussion section.



# Materials and methods

## The study contexts

Studies I-III were funded by the research and method development project IMHAd (Impact of Multicultural Health Advisors). This project was funded by the European Refugee Fund and aimed to evaluate the effects of IHA's work on health outcomes. The project was a joint venture between Lund University, Malmö University, and Uppsala University, together with partner organizations that either had IHA in their activities or took interest in following the development of the concept. Activities in the IMHAd project included planning, designing, implementing and reporting a longitudinal survey study, two qualitative studies, an economic study and an overview of how the IHA had developed over time, quality measurement, and general recommendations for development of the concept. All the results of the IMHAd project are published on Malmö University's home page and in scientific publications<sup>1</sup>.

Study IV was funded by the pilot project of PREMO-Skåne Nordost (Psykosocial preventionsmodell-Skåne Nordost<sup>2</sup>), where pilot studies and organizational conditions were set up in order to prepare the implementation of a new model for mental health promotion, secondary prevention, and rehabilitation. The pilot study concerned the role of social participation for mental health and was funded by the Labor Office in Kristianstad and partners in collaboration.

## Overall design of the studies

A mixed methods approach was applied to understand and discuss the results from different perspectives. A combination of quantitative and qualitative methodologies can contribute to a richer understanding of a phenomenon studied (Creswell, 2014). In this thesis, we used predominantly quantitative data to investigate the role of

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<sup>1</sup> <https://www.mah.se/english/research/Centers/Malmo-Institute-for-Studies-of-Migration-Diversity-and-Welfare/Research-at-MIM/Projects/IMHAd---Impact-of-Multicultural-Health-Advisors/>

<sup>2</sup> English translation: Psycho-social prevention model – North-Eastern Scania

social determinants in health promotion for recently settled migrants (Papers I and II) and to evaluate the impact of International Health Advisors' work (Paper III). The final study was designed as a qualitative in-depth study to give a deeper understanding of what social participation could mean for wellbeing among refugees in the early stages of resettlement (Paper IV). In the discussion section, the results from the different studies are synthesized to get a deeper understanding of the overall research question. Table 1 gives an overview of the characteristics of the included studies.

**Table 1: Overview of the characteristics of the studies included in the thesis**

| Topic  | Study design           | Data source/<br>informants  | Analytical<br>approach   | Data<br>collection             | Paper     |
|--|------------------------|---|--|--------------------------------|-----------|
| BMI and health information                         | Cross-sectional        | Survey data<br>Iraqi citizens with Swedish residence permit in eight counties (n=617)             | Descriptive and analytical<br><br>Multivariate logistic regression | May-June 2008                  | Paper I   |
| Mental health and social capital                   |                        |   |  |                                | Paper II  |
| Effect evaluation of International Health Advisors | Prospective cohort     | Survey data<br><br>Follow-up of participants in the previous survey (n=457)                       | Descriptive and analytical<br><br>Multivariate logistic regression | May-June 2008 to May-June 2010 | Paper III |
| Social participation and Mental wellbeing          | Qualitative interviews | In-depth interviews<br><br>Purposive sample of newly settled refugees from the Middle East (n=10) | Qualitative content analysis                                       | April - November 2015          | Paper IV  |

## Social determinants and health (Papers I and II)

The first two Papers built on survey data and had a cross-sectional design. A postal questionnaire in Arabic and Swedish was sent out to all adult Iraqi citizens who had received residence permits and resettled in eight counties (Stockholm, Uppsala, Södermanland, Östergötland, Örebro, Västra Götaland, Blekinge and Scania

counties) in Sweden during the time period December 1st 2007 – February 28th 2008. The final questionnaire had 111 items and was tested regarding its cultural acceptability and linguistic comprehensibility in focus groups with Arabic speaking persons who participated in Swedish language education for foreigners, and adjusted accordingly. The final questionnaire with an information letter, both in Swedish and Arabic, was sent to the full sample (n=1213) in May 2008 by Statistics Sweden. After two reminders the response rate was 51% (n=617). An analysis of non-responders did not show any marked differences in age and gender composition between them and the responders. For the purpose of the analyses in Papers I and II, the age group 18–64 was selected (n=587).

The objectives of Paper I were to explore the association between information on healthy diet and physical exercise and overweight among recently settled Iraqi migrants, and to detect possible effect modification on that association by educational level. Overweight (Body Mass Index >25) was used as the outcome variable, and no information received concerning a) healthy diet, and b) physical exercise were considered as main exposure variables. Age, sex, and educational level were the most important covariates. Educational level was also used in analyses of effect modification together with the two main exposure variables.

In Paper II, the objectives were to assess the associations between financial difficulties, housing problems, and experience of discrimination (independent variables) and poor mental health (dependent variable), and to detect possible effect modification on those associations by social participation and trust in others. Poor mental health was the outcome variable, while financial difficulties, housing problems, and experience of discrimination were used as main exposure variables. Age, sex, educational level, social participation, and trust in others were used as covariates. Social participation and trust in others were also used in effect modification analyses together with the three main exposure variables.

The statistical analyses were conducted using SPSS versions 17.0® and 20.0®. Logistic regressions were performed to calculate the crude odds ratios (OR) and 95% confidence intervals (CI). Frequencies were calculated and differences between the sexes were assessed by Chi-square tests. Bivariate and multivariate logistic regression analyses were performed, and odds ratios (OR) with 95% confidence intervals (CI) were calculated. Potential confounders were identified through literature and then tested in correlation matrices. The potential confounders were introduced stepwise as covariates in the multivariate regression models. The final regression models contained all potential confounders.

For Paper I, possible effect measure modification of the OR by educational level was analyzed. Four dummy variables with the values (a) high education + information (b) high education + no information, (c) low education + information, and (d) low education + no information, were created. Possible synergy effects by

low education and no information on healthy diet/physical exercise on the outcome variable (overweight) were assessed by using Rothmans' formula (Rothman, 2002):

$$SI = OR(AB) - 1 / OR(Ab) - 1 + OR(aB) - 1$$

where AB=exposed to both factors, Ab=exposed to one of the factors, and aB=exposed to the other factor.

For Paper II, six dummy variables were created for the effect modification analyses, combining financial difficulties, housing problems, and experience of discrimination on the one hand with social participation and trust in others on the other. Each dummy variable generated four different variable categories: (1) ab = unexposed to both factors a and b, (2) aB = unexposed to factor a but exposed to factor B, (3) Ab = exposed to factor A but not factor b, (4) AB = exposed to both factors A and B and following Rothman (2002), possible synergy effects could then be calculated.

## The impact of an International Health Advisor (IHA) intervention (Paper III)

This was a prospective cohort study following Iraqi citizens in eight counties in Sweden of which two received the IHA intervention and the remaining six counties were used as reference groups. The study utilized baseline and follow-up data collected within the IMHAD project. A new questionnaire in Arabic and Swedish was sent to those who had responded to the questionnaire in 2008, which now was used as base-line information. The follow-up questionnaire was distributed in May 2010. Instruments used in international, national, and regional public health studies were applied. The survey was translated to Arabic, and also this version was tested in focus groups with women and men with low and high educational levels. The survey was then adjusted according to the views of the focus groups, and back translated to Swedish again before the final version was distributed. The survey was sent out in collaboration with Statistics Sweden. The response rate in the follow-up questionnaire was 72.2% (n=441). The baseline and follow-up datasets were merged so that each individual in the merged dataset had two values for each variable.

The objectives of Paper III were to assess the impact of the International Health Advisors' work on self-rated health status, unmet health needs, received health information, social participation, and trust in others, to analyze possible effect modifications by social participation, trust in others, and educational level, and to critically discuss the results and give suggestions for the development of health promotion practice. The outcome variables were unmet health needs, unmet dental

health needs, poor dental health status, poor self-rated health, long-term illness, low social participation, low trust in others, and not having received information on healthy diet, physical exercise, and dental health. We used intervention area as the main exposure variable and age, sex and educational level as covariates. Educational level, social participation, and trust in others were also used in effect modification analyses together with intervention area.

Data for Paper III were analyzed with the statistics software package IBM SPSS Statistics 22®. Frequencies and percentages of basic sociodemographic characteristics of the sample, were calculated for all, and stratified by intervention and non-intervention counties. P-values were calculated for within-group differences for health outcomes, health information, and determinants between baseline and follow-up using McNemar's test, set at the 95% significance level. Logistic regression analyses were performed to calculate crude odds ratios and 95% confidence intervals for health outcomes and health information according to the different determinants. Between-group differences were analyzed for the variables that were statistically significant in the binary analyses, using multivariate logistic regression. Finally, analyses were performed to examine effect modification by social capital (social participation and trust in others) on the associations that were statistically significant in the binary analyses.

## Social participation and wellbeing (Paper IV)

### **Informants, data collection and analysis**

This was a qualitative interview study that aimed at capturing refugees' experiences of social participation when resettling in a new country. It was performed in three urban settings in Scania, southern Sweden. Individual in-depth interviews were regarded as suitable for exploring sensitive issues, such as mental wellbeing, and for gaining rich accounts of their experiences (Kvale and Brinkmann, 2014). The goal was to reach adult persons above 18, who had arrived in Sweden as refugees from the Middle East, had residence permits since at least a year, and could speak Swedish or English. Efforts were made to reach both men and women in different ages, with varying educational background and varying lengths of residence in Sweden. The author had help from teachers at SFI, NGO leaders, and community advisors to get contact with potential informants. These gate-openers were contacted and informed about the study so that they could provide suggestions for suitable informants. Persons who were interested were then contacted to make further arrangements. All in all, ten informants (five men and five women) who met the inclusion criteria were interviewed.

All interviews were conducted by the author and took place during spring - autumn 2015. The interviews were conducted in Swedish or English depending on the informants' wishes. They were held in the facility where the informant had been recruited, or in any other place where the informant felt comfortable. A thematic interview guide was used and organized under three broad themes: life in Sweden, social relationships in Sweden, and health in Sweden. The opening questions were intentionally broad, and follow-up questions and probing were used to stimulate the informants' own stories, focusing on their social interaction and wellbeing. The interviews took between 45 and 95 minutes and were tape-recorded and transcribed verbatim.

The aim of Paper IV was to understand what social participation means for mental wellbeing among refugees. The analysis was performed based on qualitative content analysis as described by Graneheim and Lundman (2004). This approach was regarded appropriate to capture the refugees' lived experiences, by keeping close to the data but still be able to interpret the underlying meaning (ibid). After having read the material several times, the author proceeded with the analysis following the basic steps of content analysis. This entailed reading through the material several times to get an overview of the content before selecting meaning units with data pertaining to issues relevant for the research questions. These meaning units can be condensed to facilitate the coding. However, the author chose to move directly to assigning codes to the meaning units that captured what they signified. Subsequently, categories and sub-categories were developed to describe the informants' experiences on a fairly manifest level, i.e. close to the text. Finally, a theme illustrating an understanding of the more latent or underlying meaning of the informants' stories was developed.

## Main variable definitions

### **Socio-demographic variables**

*Age* and *sex* were derived from the population register. For Paper I *Age* was classified into the age groups of 18–24, 25–34, 35–44, and 45–64 years, while for Papers II and age was used as a continuous variable.

*Educational level* was measured by the question ‘What educational training do you have?’ Those who responded ‘10–12 years’, ‘academic education (university or college)’, or ‘other’ (a mixed category, where the majority reported vocational or university level training) were defined as having high education. Low education was defined as ‘7–9 years’ or anything less than that, indicating elementary and

intermediate level schooling only, according to the Iraqi educational system, or less. Persons who reported any education that was difficult to classify were omitted from the analyses.

*Financial difficulties* were defined as having had difficulties keeping up with living expenses such as food, rent, or bills several times during the last 12 months, which would indicate a prolonged time with sustained financial difficulties.

*Housing problems* were defined as having a second-hand rental contract, being a camp tenant, or lodging with friends, relatives or compatriots, or other (except for being a first-hand apartment tenant or owning your own apartment or house).

*Experience of discrimination* was measured by the question: 'Have you, during the last 12 months, been treated offensively with reference to your ethnicity or skin color?' Those who responded 'Yes, by someone saying or screaming something to you', 'Yes, by someone attacking you in person or destroying or vandalizing something that belonged to you' and/or 'Yes, in another way' were defined as having experience of discrimination.

## **Social capital variables**

*Social participation* was measured by asking 'How often do you go to a meeting or any other activity in an organization or group (for example sports association, non-governmental organization, mosque or church, women's or men's group)?' The response alternatives 'several times a week', 'weekly' and 'monthly' were defined as high social participation, as they would indicate a regular activity. 'Quarterly', 'Sometimes' and 'More seldom or never' were defined as low social participation, indicating infrequent activity.

The variable *trust* in others was created by combining four variables: 'Take a standpoint on the following statements: (i) most people would use you if they got the chance, (ii) most people essentially try to be fair, (iii) you can trust most people, and (iv) you can never be careful enough when dealing with other people'. The combined responses constituted an index generating 0–12 points, where a lower number of points indicated high trust in others. The highest quartile of the distribution (7/8 points) was defined as low trust in others.

## **Health measures**

*Mental health* was a dichotomous variable created from the 12-item version of General Health Questionnaire, GHQ-12, which has been shown to have a good cross-cultural validity and stable factor structure in many different settings

(Goldberg et al., 1997). We dichotomized the 12 variables, assigning the value 1 for the response alternatives 'more than usual' and 'much more than usual', and the value 0 for 'less than usual' and 'not at all' for the different symptoms of poor mental health. The dichotomized variables were then added to each other into a scale ranging from 0 to 12 points. The validity and reliability has been shown to be good in the Arabic version, as well as in international studies, using a cut-off point between 2 and 3 on the scale (Goldberg et al., 1998, Daradkeh et al., 2001). The mean score within our sample also motivated this dichotomization.

*Dental health* was measured by asking the respondents to rate their dental health on a Likert scale with five values; "Very good", "Quite good", "Neither good nor poor", "Quite poor" and "Very poor". The baseline and the follow-up variables were dichotomized, so that those who rated their dental health as "quite poor" or "very poor" were defined as having *poor dental health*, and the others as having *good dental health*.

*Self-rated health* was assessed with a single question requiring the respondents to rate their current general health status on a Likert scale with five values; "Very good", "Quite good", "Neither good nor poor", "Quite poor" and "Very poor". The baseline and follow-up variables were dichotomized so that "Quite poor" or "very poor" were defined as *poor self-rated health*, and the other values as *good self-rated health*. This instrument has demonstrated good predictive value when it comes to actual morbidity and mortality (DeSalvo et al., 2006, Mavaddat et al., 2014).

*Long-term illness* was defined as having answered "yes" to the question "Do you have any lingering illness, difficulties following an accident, disability or other frailty". The baseline and follow-up variables were transformed into a change variable similarly as the previous outcome variables.

*BMI* was calculated by dividing the weight in kilograms by the height in meters squared. The variable was dichotomized so that a BMI of less than 25 kg/m<sup>2</sup> was defined as normal weight and a BMI equal to or more than 25 kg/m<sup>2</sup> was defined as overweight. BMI has been used in several international studies and the definition of overweight has been used by WHO (2006).

*Having received information on healthy diet/physical exercise* was measured by the questions: "Have you received information on foods that are considered good for your health?" and "Have you received information on physical exercise/sports?" The response alternatives were dichotomized, so that "Yes, a lot" and "Yes, fairly much" were coded as "Yes", and "Yes, a little" and "No" were coded as "No".

## Ethical considerations

The studies based on survey data (Papers I-III) were approved by the Regional Ethical Review Board in Lund (registration number 2008/191). The receivers of the survey were informed in Arabic and Swedish about the purpose of the survey, voluntary participation, and confidential handling of information. In addition to the provision of contact information to the (Swedish-speaking) responsible researchers, an Arabic-speaking contact person was assigned telephone hours to respond to any questions in Arabic.

The qualitative study (Paper IV) was also approved by the Regional Ethical Review Board in Lund (registration number 2015/1). Informed consent was obtained, indicating that informants were informed about the purpose of the study, that participation was voluntary, that they could withdraw at any time and that all information would be treated confidentially. Only oral informed consent was asked for, based on recommendations from the ethical review board. Written consent was regarded as more threatening to confidentiality since it implies keeping records were people's signatures. Interviews have the potential risk of doing harm as informants are asked to recall painful memories. During the interview the interviewer therefore avoided probing further if informants showed signs of distress. Contact information to health services was also prepared in case psychosocial support was needed. However, many of the informants expressed their appreciation for being invited to a conversation with someone who was interested and prepared to listen to their stories (Corbin and Morse, 2003).



# Main findings

## How does educational level modify the association between health information and overweight? (Paper I)

In Paper I, we found that overweight and obesity were widespread among recently settled Iraqi migrants. The prevalence of individuals who had a Body Mass Index (BMI) of 25-29.9 was 40%, and the proportion of those who had a BMI of 30 or more was 15%. These figures should be compared to the general Swedish population, where in 2008, 37% had a BMI of 25-29.9 and 18% had a BMI of 30 or more (Nationella folkhälsoenkäten A-Ö, Folkhälsomyndigheten, 2016). Also, 40% reported that they had not received any information on healthy diet, and 66% reported that they had not received information on physical exercise. There was a statistically significant higher risk of overweight (defined as BMI  $\geq 25$ ) associated with not having received information on a) healthy diet and b) physical exercise, with an odds ratio of 1.6 (95% CI 1.1-2.32) and 1.58 (95% CI 1.07-2.32), respectively (Table 2 a).

**Table 2a: Risk of overweight when not having received information on healthy diet and physical exercise, article I. Adjusted odds ratios (OR) and 95% confidence intervals (CI).**

| Dependent variable                            | Independent variable                | Adjusted OR* (95% CI) |
|---|-------------------------------------|-----------------------|
| Overweight (BMI $\geq$ 25 kg/m <sup>2</sup> ) | No information on healthy diet      | 1.6 (1.1-2.32)        |
|   | No information on physical exercise | 1.58 (1.07-2.32)      |

\*Adjusted for age, sex, and educational level.

The effect between overweight and not having received health information was modified by level of educational, so that the association was stronger among those who had a higher educational level (Table 2b and 2c), meaning that level of education seemed to be a discriminatory factor for understanding the association between receiving health information on healthy diets and presence of overweight. Among those with low education level, the information seemed to have no impact, whereas among the highly educated participants, the effect was statistically significant, such that those who reported that they had not received any information

healthy diets were twice as likely to be overweight compared to those who had received information.

**Table 2b: Risk of overweight, analysis of interaction between educational level and information on healthy diet. Adjusted odds ratios (OR) and 95% confidence intervals (CI).**

| Dependent variable                            | Interaction terms                                       | Adjusted OR* (95% CI) |
|---|---|-----------------------|
| Overweight (BMI $\geq$ 25 kg/m <sup>2</sup> ) | High educational level – Information on healthy diet    | 1 (reference)         |
|   | High educational level – No information on healthy diet | 2.04 (1.26-3.28)      |
|   | Low educational level – Information on healthy diet     | 1.07 (0.66-1.74)      |
|   | Low educational level – No information on healthy diet  | 1.10 (0.63-1.91)      |

\*Adjusted for age and sex.

The same pattern as above was present when we analyzed the interaction between level of education and having received information on physical activity and their combined association to being overweight. The associations were, however, statistically insignificant.

**Table 2c: Risk of overweight, analysis of interaction between educational level and information on physical exercise. Adjusted odds ratios (OR) and 95% confidence intervals (CI).**

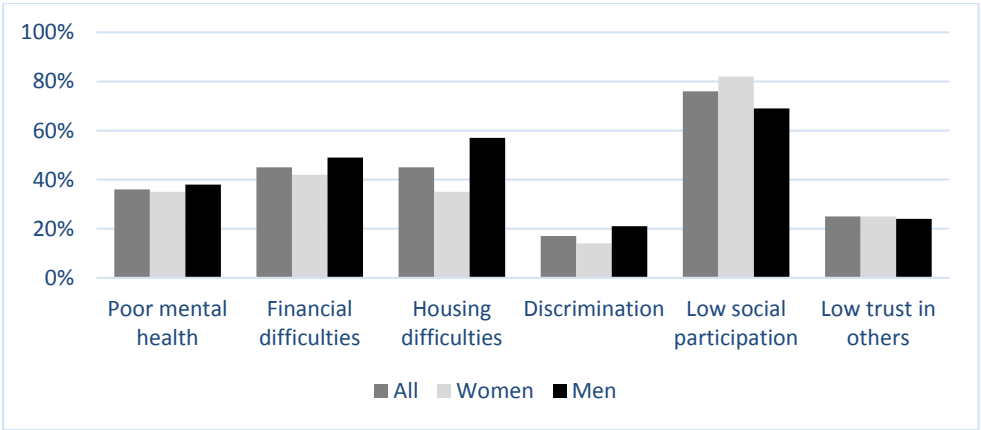
| Dependent variable                            | Interaction terms  | Adjusted OR* (95% CI) |
|---|--|-----------------------|
| Overweight (BMI $\geq$ 25 kg/m <sup>2</sup> ) | High educational level – Information on physical exercise    | 1 (reference)         |
|   | High educational level – No information on physical exercise | 1.56 (0.98-2.48)      |
|   | Low educational level – Information on physical exercise     | 0.81 (0.41-1.6)       |
|   | Low educational level – No information on physical exercise  | 1.24 (0.75-2.06)      |

\*Adjusted for age and sex.

The same analyses as presented in Tables 2a-b were also conducted stratified by gender. Those findings indicated that there was effect modification among women and in relation to information on healthy diets. However, the analyses could not identify any interaction effects.

# How does social capital (participation and trust) modify the association between mental health and post-migration difficulties? (Paper II)

In Paper II we showed that recently settled Iraqi migrants had a high prevalence of poor mental health (measured by GHQ-12), and of post-migration difficulties i.e. financial difficulties, housing problems, and experience of discrimination. The analyses also investigated whether these associations were modified by low social participation and low trust in others. Figure 2 presents the prevalence in the dataset of each included variable.



**Figure 2. Prevalences of the included variables (Paper II).**

The analyses suggested that poor mental health – as measured by the GHQ - was independently associated with the post-migration factors financial difficulties (OR 2.2), housing problems (OR 2.3), and experience of discrimination (OR 3.3), after adjustments (Table 3). The analyses suggested potential confounding of the associations by low social participation and low trust in others. Thus, we performed analyses of effect modification between the three different main exposures of post-migration and low social participation and low trust in others respectively (see Table 4).

**Table 3: Risk of poor mental health (Paper II). Adjusted odds ratios (OR) and 95% confidence intervals (CI).**

| Dependent variable | Independent variable       | Adjusted OR* (95% CI) |
|--------------------|----------------------------|-----------------------|
| Poor mental health | Financial difficulties     | 2.24 (1.53-3.27)      |
|                    | Housing problems           | 2.28 (1.54-3.36)      |
|                    | Experienced discrimination | 3.33 (2.05-5.4)       |

\*Adjusted for age, sex and educational level

**Table 4: Analyses of effect modifications by social participation and trust in others on the associations between financial difficulties, housing problems, experience of discrimination and poor mental health expressed as odds ratios (OR) and 95% confidence intervals (CI) and synergy index (SI).**

\* No - No = no financial difficulties - no weak social participation and no financial difficulties - no low trust in others

|                              |           | Weak social participation |      | Low trust in others |      |
|------------------------------|-----------|---------------------------|------|---------------------|------|
|                              |           | OR (95% CI)               | SI   | OR (95% CI)         | SI   |
| Financial difficulties       | No – No*  | 1.0 (ref.)                |      | 1.0 (ref.)          |      |
|                              | No – Yes  | 1.60 (0.84-3.05)          |      | 1.40 (0.74-2.65)    |      |
|                              | Yes – No  | 2.32 (0.96-5.58)          |      | 2.02 (1.28-3.19)    |      |
|                              | Yes – Yes | 3.54 (1.86-6.73)          | 1.32 | 3.72 (2.05-6.74)    | 1.92 |
| Housing problems             | No – No   | 1.0 (ref.)                |      | 1.0 (ref.)          |      |
|                              | No – Yes  | 2.75 (1.26-5.99)          |      | 1.55 (0.88-2.74)    |      |
|                              | Yes – No  | 3.84 (1.55-9.55)          |      | 2.24 (1.41-3.56)    |      |
|                              | Yes – Yes | 6.32 (2.84-14.08)         | 1.16 | 4.92 (2.48-9.72)    | 2.19 |
| Experience of discrimination | No – No   | 1.0 (ref.)                |      | 1.0 (ref.)          |      |
|                              | No – Yes  | 1.71 (1.01-2.91)          |      | 1.44 (0.88-2.35)    |      |
|                              | Yes – No  | 2.56 (0.84-7.87)          |      | 2.70 (1.46-5.01)    |      |
|                              | Yes – Yes | 5.84 (2.93-11.62)         | 2.13 | 4.94 (2.31-10.56)   | 1.84 |

The first three associations were modified by trust in others, indicating that high trust buffered the harmful effects of the aforementioned three factors on mental health. Social participation had a protective effect on mental health when there was

exposure to experience of discrimination. Thus, low social participation and low trust in others seemed to be both parts of the causal mechanism behind poor mental health, as well as effect modifiers.

## Does social capital (participation and trust) and educational level modify the impact of a health intervention? (Paper III)

In Paper III the impact of a peer education intervention, International Health Advisors, for recently settled migrants was evaluated. The intervention impact on self-rated health, mental health, unmet health needs, and health information was assessed. It was found that the group that had contact with the International Health Advisors felt more informed about diet and physical exercise than the group that did not have access to the intervention (see Table 5). No other statistically significant differences were found between the groups, either at baseline or at follow-up.

**Table 5: Prevalence of health information variables at baseline at follow-up in intervention and non-intervention groups**

| Outcome                             | Intervention group<br>(baseline – follow-up, p-value) | Non-intervention group<br>(baseline – follow-up, p-value) |
|-------------------------------------|---|---|
| No information on healthy diet      | 45.2% - 32.8% (p=0.02)                                | 38.6% - 36.3% (p=0.53)                                    |
| No information on physical exercise | 70.7% - 55.6% (p=0.00)                                | 63.7% - 58.9% (p=0.12)                                    |
| No information on dental health     | 70.7% - 48.7% (p=0.00)                                | 61% - 45.7% (p=0.00)                                      |

In order to assess the change between baseline and follow-up further, we analyzed the change between baseline and follow-up in several outcome variables on the one hand and intervention status, educational level and social capital at baseline on the other (see Table 6). Not having received information on healthy diet and physical activity was significantly associated with living in a non-intervention area (OR 2.41, 95% CI 1.09-5.33). Low social participation was negatively associated with deteriorated or unchanged unmet health care needs (OR 0.48, 95% CI 0.25-0.92), meaning that individuals with low social participation had a lower risk of increased unmet health care needs, which might seem counter-intuitive. These associations remained statistically significant after adjustments for sex, age, and educational level (OR 2.31, 95% CI 1.02-5.22 and OR 0.47, 95% CI 0.24-0.92, respectively).

We then analyzed the effect modification of social participation, social trust (social capital) and educational level on the associations between exposure to the intervention and having received information on healthy diet and physical exercise, and the effect modification of educational level on the association between high social participation and unmet health care needs. None of the exposure combinations were statistically significant, and there were no indications of effect modification by social participation, social trust (social capital) or educational level.

**Table 6: Crude odds ratios (OR) and 95% confidence intervals (CI) for unchanged or deteriorated health outcomes and health information between intervention and non-intervention area, regarding educational level and social capital at baseline.**

| <b>Outcomes</b>                 | <b>Unmet health needs</b> | <b>Unmet dental health needs</b> | <b>Poor self-rated health</b> | <b>Poor mental wellbeing</b> | <b>Long-term illness</b> | <b>No info on health diet and physical exercise</b> | <b>No info on dental health</b> |
|---------------------------------|---------------------------|----------------------------------|-------------------------------|------------------------------|--------------------------|---|---------------------------------|
|                                 | <b>OR (95% CI)</b>        | <b>OR (95% CI)</b>               | <b>OR (95% CI)</b>            | <b>OR (95% CI)</b>           | <b>OR (95% CI)</b>       | <b>OR (95% CI)</b>                                  | <b>OR (95% CI)</b>              |
| <b>Non-intervention area</b>    | 0.99 (0.57-1.72)          | 1.18 (0.62-2.28)                 | 1.03 (0.42-2.56)              | 1.41 (0.78-2.56)             | 0.72 (0.32-1.65)         | 2.41 (1.09-5.33)                                    | 1.34 (0.82-2.17)                |
| <b>Low educational level</b>    | 1.00 (0.54-2.00)          | 0.86 (0.50-1.46)                 | 1.00 (0.40-2.50)              | 0.76 (0.41-1.42)             | 0.77 (0.37-1.62)         | 1.38 (0.54-3.54)                                    | 0.79 (0.48-1.3)                 |
| <b>Low social participation</b> | 0.48 (0.25-0.92)          | 0.60 (0.28-1.33)                 | 0.23 (0.05-1.02)              | 0.56 (0.26-1.18)             | 0.90 (0.39-2.06)         | 0.83 (0.32-2.14)                                    | 1.34 (0.81-2.23)                |
| <b>Low trust in others</b>      | 1.07 (0.62-1.83)          | 1.65 (0.83-3.27)                 | 0.54 (0.23-1.26)              | 0.62 (0.35-1.10)             | 0.99 (0.47-2.08)         | 0.80 (0.35-1.80)                                    | 1.12 (0.69-1.82)                |

# What does social participation mean for the wellbeing of refugees? (Paper IV)

The qualitative content analysis of the interviews resulted in one overarching theme *Social participation helps coping with despair and gives hope for stability*. Figure 3 gives an overview of the results by also presenting the main categories as well as the sub-categories that support this theme.

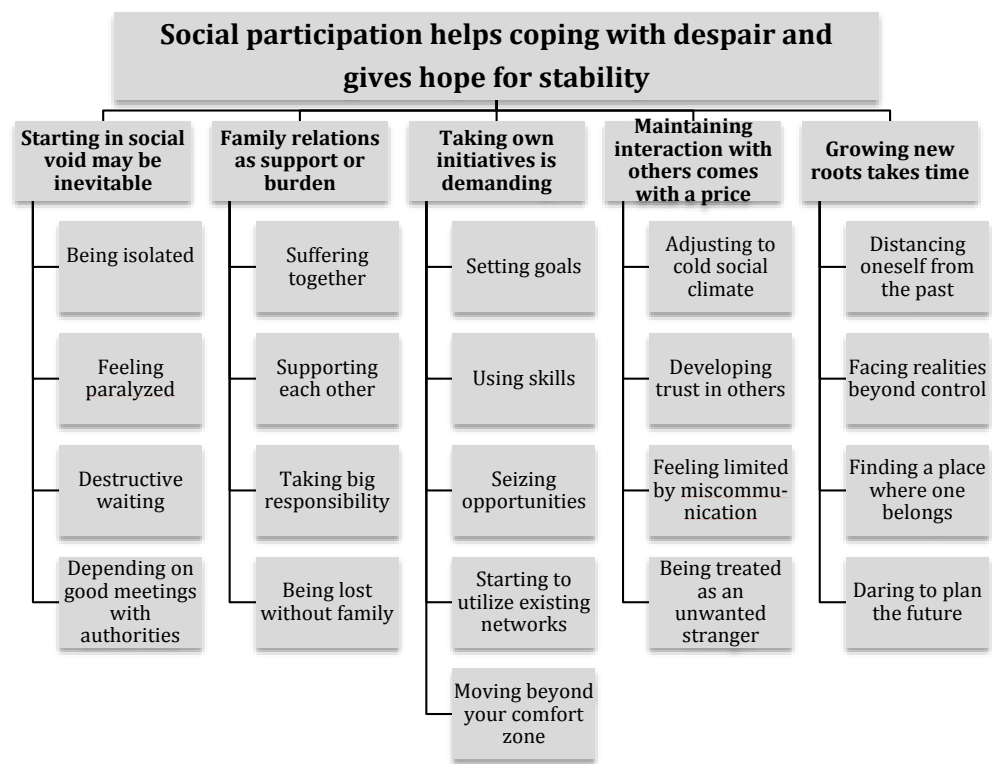


Figure 3. Overview of results indicating overarching theme, categories and sub-categories

The analysis indicated that different types of social participation influenced wellbeing in different ways over time. Our interpretation was that social participation in the early stages after arriving in Sweden mainly was limited to family or in-group relations. The isolation, painful memories, and difficult experiences were often devastating, but for those who had the possibility to interact

with family members this helped to relieve the pain. For others this was a very difficult time. It was also evident that family relations also could be a burden since it meant taking a big responsibility also for the wellbeing of parents and younger siblings.

*For example, when my brother is sad, I sit with him and talk, and fix all the problems...// Both feel better. Because my brother is my best friend. If he is sad I am sad, too. In my culture, when we have a best friend, or brother, we do everything for him. Whatever my brother wants to do, I must help him. Whatever I want to do, my best friend, too, I did not say we will or want to, MUST, we MUST help each other. (Man, 27 years)*

Hopes and ambitions for a stable future later enabled new social initiatives that brought relief from initial isolation and counteracted passivity. New friends meant a lot and had the power to change an initial hopelessness to perceptions of a new beginning.

*Every weekend, I hang out with my friends. Go to the disco, for example, sometimes. Or meet in somebody's home, sit and discuss...// It means a lot. I can NEVER live without friends. Yes, it means a lot. When you have a friend, you think that life is great, yes, you want to go on. But if you just live alone and think of bad things, I hope you will never experience it, but when you come from war, and all your friends have died, you just think that you do not care about anything. I NEVER want anything again. They were my best friends. But later, when I had met some new friends, and started hanging out with them, everything was better. (Man, 20 years)*

Even when feeling uncomfortable about taking own initiatives, and meeting resistance from both native Swedes and from members of their own ethnic group, the informants made efforts to maintain and create new social contacts outside the family. This meant moving outside their comfort zone and having to cope with both language and communication problems. However, it was clear that taking a more active part in social activities, for example, by arranging social events for others, was important for their own wellbeing.

*For example, there was an event, we did a Christmas party at Christmas, in one of the refugees' hotels, in Xx (city). We organized everything, we bought things, we decorated the place with a lot of things, a lot was really happening there! And then when people came, when we had music and a magician and a lot of things, so we were happy, and I was really happy at that time. When I saw how happy all the people were, like myself, I thought, yes, it is a really good thing to do, I was enjoying it. (Woman, 23 years)*

It was also clear that participating in more formal organizations, such as NGOs, played a crucial role in giving relief from negative emotions. It could charge them with energy and counteract a stressful home situation. Participation in organized

activities enabled them to distance themselves from the past and start making plans for the future.

*I feel I have two lives here. One here (NGO), and one at home. Here I have no problems, I feel better, when I leave home and come here, I really enjoy it, because I leave the problems in the family behind....// When I am here (NGO), I feel really good, health-wise. I can lift and carry everything...// Yes. I am strong here. But when I go home, I feel nervous and uncomfortable, because there is a lot of stress at home.*  
(Man, 55 years)

Finally, the informants' stories indicated that growing new roots in a new country takes time. They described a continuous struggle against isolation and passivity by building new contacts and involving themselves in different activities. They were forced to tackle realities beyond their control, constantly being reminded of ongoing wars, with continued worries for relatives and loved ones. In the Swedish setting they were reminded of their differentness, and residential segregation made many of them remain in neighborhoods where native Swedes were few, and where social participation was limited to other immigrant groups. Ideally, however, they gradually started to find stability in their mental wellbeing and in life.

# Discussion

## Summary of findings

The study findings showed that among recently settled migrants in Sweden, several public health challenges remain two years post-settlement. Those that were highlighted were overweight and obesity, poor mental health, poor self-rated health, and long-term illness. Adverse social determinants of health, such as low educational level, low social participation, low trust in others, and socioeconomic problems also remained at follow-up. A high proportion of individuals reported not having received information about healthy diet and physical exercise, which was associated with increased risk of overweight. This association was stronger among persons with high educational level. Having a high educational level makes it easier to seek, find, and make use of information, including health information. Thus, persons with low educational level may need targeted health information or other kinds of interventions to improve health literacy. The conclusion in Paper I was that targeted health information interventions for recently settled migrants need to address not only ethnic background, but also social factors, such as educational level of the target group. Paper II showed that weak socioeconomic position and experiences of discrimination were associated with poor mental health, and that social capital somewhat moderated these associations. It was concluded that social participation, for example in civil organizations, could be a fruitful way to buffer the negative effects of post-migration risk factors for poor mental health among recently settled migrants. Paper III showed that the intervention of International Health Advisors did not have any statistically significant impact on health or social capital. However, the results showed that the participants in the intervention group felt more informed on health issues than the control group. When it came to health status, there was little or no change over time. It was concluded that the International Health Advisors could contribute to a self-reported higher level of health information, but that more systematic efforts to address persisting poor health status among recently settled migrants should be undertaken. The qualitative study (Paper IV) revealed that recently settled refugees experienced social participation, both within the family and outside it, as essential for their mental wellbeing during their first period of time in Sweden. Social participation helped them cope with despair

and initial difficulties and later on gave them hope for stability and a future in the new country.

According to Green and South (2006), possible explanations for shortcomings of interventions can be divided into theoretical errors, i.e. that the intervention builds on erroneous theoretical assumptions, and implementation errors, i.e. that the interventions has not been implemented as intended. In this section the studied IHA intervention will be discussed in relation to Green and South's classification, and a way forward will be suggested.

## Theoretical considerations

Papers I-III in this doctoral thesis showed that there are many health needs among recently settled migrants in Sweden and that health needs remain two years post-settlement, regardless of the intervention. These health needs have been shown to be greater than in the rest of the Swedish population (Sundell Lecerof and Stafström, 2011) and confirm earlier studies that have highlighted health inequities between migrant groups, especially refugees, and native European populations (ref ref). The papers also showed that *social determinants*, such as educational level, socio-economic status, social participation, and trust in others, are important factors for creating health and disease and/or act as moderating factors. Needless to say, building a new life Sweden after experiences of armed conflict, trauma, hazardous migration, uncertain wait for asylum, and the challenges of resettlement while worrying about family left behind put massive strains on health and wellbeing. The participants in our studies reported a very low level of social participation and thus very little access to any social capital during their first period of time in Sweden. The informants in the qualitative study described how they started from zero in building their first social contacts, often within their own group, unless they had family members in Sweden. *Bonding social capital* was experienced as crucial for survival, but also involved a great responsibility, sometimes at the expense of own needs. Getting access to, or building *bridging social capital* through active social participation was difficult, as the informants often felt they were treated as outsiders. However, once they succeeded, they appreciated it and felt it was useful. Social participation was experienced as a buffering factor against mental health threats; it served as a protecting factor that helped them to cope with despair and gave them a tangible hope to find stability. The findings from this qualitative study thus confirmed and deepened our understanding of our previous findings, where we showed that both social participation and trust in others could moderate the harmful effects of financial difficulties, housing problems, and experienced discrimination for recently settled migrants' mental health (Paper II).

Among the many issues that need to be addressed during resettlement are the health issues. Therefore, a valid target group and needs assessment should include these factors and design messages and methods accordingly, as well as set up goals that address them. Available information concerning the IHA's work does not include such clearly set goals. The ambition is to contribute to health through increased knowledge about various health issues. Moreover, there does not seem to be any documentation clarifying any explicit theoretical model for addressing specific health problems, or for choosing provision of health information as a solution. It can be inferred from available documentation presenting the IHA's work that the IHA practice is based on an assumed *KAP (knowledge-attitudes-practices) model*. The KAP model assumes uncomplicated and linear relationships between knowledge, changed attitudes, and behavioral change. The model does not capture intra- and interpersonal cognitive processes, social and environmental factors or change over time. An intervention building on a (tacit) simplistic model such as the KAP model will fail to address some key determinants of health and will inevitably have only limited effects. It also fails to analyze a health problem and its underlying causes thoroughly. As has been shown in this thesis, determinants of health include not only individual characteristics and habits, or lack of knowledge, but also social and societal factors such as participation in the community, available social support, access to services, and influence over factors that affect health.

## Implementation

Presumably, action plans for the IHA's continued work are under development, building on previous evaluations, that have suggested the following ways to improve practice: clearer goals and strategies, clearer definition of the IHA's role and the contents of their work, training in public health for the IHA, creating links with organizations in mainstream society (for example primary health care), and combining health information with practical skills training (Daryani and Löthberg, 2011, Baker and Allebeck, 2012).

Saunders and colleagues (2005) suggest a framework for evaluation of health promotion programs that includes some criteria for success. One possible source of error when goals in a health promoting intervention are not met is failure to implement what was planned. Peer education as a method per se has not been proven effective for promoting health (Turner and Shepherd, 1999). As pointed out by Turner and Shepherd (ibid), a peer educator is considered a representative of the target group, but the views of the target group are important to consider. Which aspects are considered important to make someone accountable, for example? A target group defined on the basis of ethnicity and/or language is never homogenous;

other aspects may be considered more important, not least when refugees with different political opinions, in an ongoing armed conflict are present in the same room. The built-in top-down power structure in a peer education intervention may also be a problem, as teaching is done from an appointed peer educator to the target group. This approach is not compatible with the aim of increasing the target group's own active participation and ownership of a health promoting intervention, where the outcome is expected to be a higher degree of empowerment, and where the participants should be better equipped to take control over factors which affect their health.

## The way forward

Health promotion practice targeting migrant groups, especially recently settled refugees, has come to a crossroads. With increased refugee immigration during the last few years, it is obvious that there are health needs to be addressed, and that health information needs to reach these groups, as human rights. However, information is not enough, and the question is – should health promoting interventions be targeted at migrant groups exclusively, or should health promotion interventions strive towards strengthening links with mainstream society, cohesion, and collective action? In this section, tools for systematic and theory- and evidence-based planning, implementation, and evaluation are outlined, and a more participatory and empowering approach is suggested, taking social determinants into account.

Systematic planning paying attention to each new target group's unique characteristic, health needs, risk factors and capabilities, participatory design aiming at empowerment, and theory-based understanding of how behavior change can be achieved are needed. The success of a health promoting intervention is dependent upon each step of the planning, implementation, and evaluation process. To systematically analyze a target group and its health needs and its causes, Bronfenbrenner's (1977) or Whitehead and Dahlgren's (1991) ecological models can be used as a supporting structure.

In the planning stage, it is necessary to make a comprehensive target group analysis, needs assessment, problem and goal formulation and choice of message, medium, and method. It is also important to find the causal mechanism(s) for each problem and to devise a proper solution. Specific, measurable, achievable, realistic and time-related ("SMART") goals are set up in relation to these solutions, and an evaluation plan is established to make it possible to monitor the fulfillment of goals (Tones and Green, 2004). For these purposes, a combination of, for example, the stages of change model and the social cognitive model could be useful for understanding

barriers and enablers for behavioral change, and for designing a health promoting intervention (Nutbeam and Harris, 2004). Other criteria for successful interventions according to Saunders (2005) are that the intended dosage is delivered (completeness) and received (exposure), that the reach (participation rate) is satisfactory, that the recruitment has attracted the participants desired, and that the context (for example, factors in the environment that could influence the intervention) for the intervention has been optimal.

In the last decade, there has been a growing interest in participatory intervention designs, not just for vulnerable or “hard to reach” groups, as in Freirean pedagogy, but also in social innovation studies and practice. Examples of participatory designs and methods for health promoting interventions were presented earlier in the thesis (Caperchione et al., 2009, O'Driscoll et al., 2014). A successful implementation builds upon the stakeholders' confidence in and faithfulness to the plan. A participatory approach is therefore important to ensure that the stakeholders feel a sense of ownership in the intervention. When the stakeholders feel that the intervention addresses their real problems, and when they feel that they are part of the solution and can affect it substantially, it is more likely they will stick to the plan. Evaluation should also be participatory, where participants themselves are those who report to what extent they feel they have achieved goals they themselves set up. Participatory designs capture health promotion at its essence, namely, empowerment. Facilitating collective empowerment leading to action and influence is the ultimate goal in both Freirean pedagogy and health promotion theory (Wiggins, 2012).

This thesis has shown that social participation is experienced as crucial for wellbeing of newly settled refugees. Active social participation in, for example NGOs, can contribute to building new relationships with people outside one's own group and even with institutions or authorities, and thereby strengthen the fundamentals of bridging and linking social capital. This kind of social capital may increase refugees' access to tangible and intangible resources and influence factors that affect their health (Berkman and Kawachi, 2000). Our results thus support community-based interventions that aim to strengthen community members' collective action and enable building *bridging* and *linking* social capital, which would give opportunities for recently settled migrants to build new networks outside their own groups, and thereby become more socially integrated in mainstream society and gain access to information and job opportunities outside their group (Szreter and Woolcock, 2004). This empowering process can be done through Freirean education (Wiggins, 2012) and through “health action zones” or other community-oriented interventions (O'Driscoll et al., 2014). Both these approaches can be utilized by the IHA – by focusing on skills training, building stronger networks, increasing access to and building trust in service providers and authorities in their communities, and stimulating action for health. Promising developments

have taken place in Scania county the last few years (Länsstyrelsen Skåne, accessed 2016-05-08). All authorities who co-operate in the reception and resettlement of recently, refugees have set up a web of projects that aim at improving social and economic integration in various arenas, e.g. mental health, participation in civic organizations, work or entrepreneurship, and language training. Preliminary results are promising, but more research is needed to establish whether this multi-disciplinary approach is effective or not.

## Methodological considerations

In this thesis, triangulation of different methodological approaches was used, a strategy that gives richer results and highlights a research question from different perspectives (Creswell, 2014). The quantitative analysis provided an insight into the scope, variability, and possible interactions between factors influencing different health outcomes, whereas qualitative data provided a deeper understanding of the human experiences of the studied phenomenon, in this case social participation.

However, both quantitative and qualitative approaches have methodological limitations, which need to be addressed. Regarding Papers I and II, because all data were cross-sectional and collected at one point in time, it was not possible to determine whether an exposure preceded the outcome/disease in time or not. Therefore, the direction of causality between two associated measures could not be determined. The longitudinal cohort study is potentially the strongest study design, but the limitations of this design are often losses to follow-up and failure to account for competing risks. The postal survey method for collecting data is limited, when response rates are low. In Sweden today it is common for national surveys, including the annual public health survey, to have response rates around 50% (Boström, 2010). Compared to this, the response rate of 72% in the follow-up survey in this thesis is high, especially in that it reached recently settled migrants, who normally are a hard to reach group. Finally, all epidemiological studies risk selection bias, misclassification bias, and confounding. In our studies several measures were taken to minimize these risks. To assess the risk of selection bias in the baseline data (Papers I and II), we performed a dropout analysis and found no evidence for uneven dropout rates across age groups and sex. Recall bias could have caused dependent misclassification of exposure to health information in Paper I, since overweight cases may be more prone to remember previous exposures to information. However, since the opposite might also be true, it is difficult to judge whether the results represent over- or underestimated risk estimates. By classifying exposed and unexposed to the intervention in Paper III based on residential area, we may have misclassified a few in both directions. To reduce this risk, we omitted those who

moved between areas from the analysis and assumed the remaining misclassification to be non-differential. In the analysis we adjusted our models for the most common possible socio-demographic confounders without finding any significant changes in the odds ratios obtained for our main exposures. Nevertheless, it is impossible to rule out some residual confounding caused by unknown variables.

With regard to the qualitative study, the study design enabled us to perform an analysis of the overall experiences of social participation and wellbeing. However, the sample did not have sufficient variation to allow for a more nuanced analysis of potential differences in experiences between, for example, men and women or people with different educational backgrounds. Not being able to conduct the interviews in Arabic, i.e. the mother tongue of the informants, also influenced the richness of the data, since some of the informants had difficulties with the Swedish or English language. However, we believe that the interviews benefited from the face-to-face interaction with a truly interested researcher and that having an interpreter involved in the process would have created other problems, such as achieving rapport. To increase the credibility of the findings, the first author continuously discussed the analysis with the last author in *peer debriefing* sessions. *Note keeping* about the *analytical decision trail* and *memo writing* in conjunction with the interviews were also applied as measures to increase confirmability and dependability of the study (Dahlgren et al., 2004). The study aimed to capture the experiences of refugees from the Middle East, since they constitute one of the largest migrant groups in Sweden today. The role of social participation for wellbeing is, however, likely to be transferable to other refugee groups, even if this needs to be discussed and contextualized.



# Conclusions

This doctoral thesis suggests the need for the development of intervention studies in the field of migrant health, with a stronger focus on the role that the social determinants of health play in the daily lives of recently settled migrants. The current findings may form the basis for future studies, where the health promoting potential of building social capital through interventions can be further explored. Another contribution is the critical discussion of the peer education method, a widely used method that nevertheless needs further theoretical and methodological development.

With regard to practice, the studies imply that there are considerable health needs among recently settled migrants, especially among refugees, that need to be addressed. The studies also imply that health information, albeit necessary, is not enough to promote health. Officials and practitioners need to take a more systematic grip on the health problems that exist, by taking not only the ethnic and cultural background, but also the socioeconomic determinants of health, into account in planning, implementing, and evaluating health promoting interventions for recently settled migrants. Target group analyses should also take social determinants into account, as these are the basis for designing health messages, choosing methods and medium, and setting goals. Finally, the studies suggest that interventions for promoting health among recently settled migrants, especially refugees, could aim at building *bridging* and *linking* social capital, which seem to be important protective factors for health and wellbeing. However, future studies need to further explore the possible impact or buffering effects of bridging and linking social capital when utilized in health promoting interventions.



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Many studies have shown that migrant groups, especially refugees, have poorer health and more unmet health needs compared to native European populations. Many interventions have been carried out to address this problem. In Sweden, a concept called International Health Advisors (IHA), has been tried. The IHA are peer educators providing health information for recently settled refugees. In this thesis, social determinants playing a role in health promotion for recently settled migrants, and the intervention outcomes are explored. A way forward based on applications of health promotion theory and an understanding of the role of social capital and other social determinants is proposed.

