

Linköping University Medical Dissertations No. 1190

My Home is my Castle:
**Residential Well-being and
Perceived Safety in Different
Types of Housing Areas in
Sweden**

Agneta Kullberg

Division of Community Medicine, Social Medicine and Public Health Science
Department of Medical and Health Sciences
Linköping University, Sweden



Linköping University
FACULTY OF HEALTH SCIENCES

Linköping 2010

© Agneta Kullberg, 2010

Cover pictures/illustration: Agneta Kullberg & Kjell Johansson

Printed in Sweden by LiU-Tryck, Linköping, Sweden, 2010

ISBN 978-91-7393-349-0

ISSN 0345-0082

“The connection between the *health* and the *dwellings* of the population is one of the most important that exists”.

Florence Nightingale, 1860

CONTENTS

ABSTRACT	1
LIST OF PAPERS	3
INTRODUCTION.....	5
BACKGROUND.....	7
Towards improved housing standards in Sweden	7
Housing and the relationship with health and safety.....	9
Residential well-being.....	13
Housing and safety dimensions	13
Safety as an objective condition.....	15
Safety as a subjective phenomenon	16
Safety promotion	18
Community-based safety promotion programmes	19
Summing up background	23
AIMS	25
MATERIALS AND METHODS.....	26
Empirical setting.....	26
Data sources	29
Focus group interviews	29
Questionnaire	30
Questions used in the papers.....	31
Police-reported crime records.....	33
Safe Community programme: data from the application document	33
Data analyses	34
Paper I.....	34
Paper II	34
Paper III.....	35

Paper IV	37
Characteristics of the 4 papers included in the thesis	39
Ethical considerations	39
MAIN RESULTS	40
Non response	40
Paper I	42
Paper II.....	43
Paper III	45
Paper IV	47
DISCUSSION	52
Neighbours and interaction among people in an area	52
Safety-related concerns.....	53
Perceived area reputation.....	56
Physical quality of the residential environment.....	59
Actions to achieve safe neighbourhoods	60
Method discussion.....	63
Summary.....	67
CONCLUSIONS AND FUTURE RESEARCH.....	69
SVENSK SAMMANFATTNING	70
ACKNOWLEDGEMENTS.....	72
REFERENCES	75
APPENDIX A: INTERVIEW GUIDE FOR FOCUS GROUP INTERVIEWS	93
APPENDIX B: QUESTIONS USED IN THE PAPERS	94

ABSTRACT

Background: Safety in the housing environment is a basic human need and may be a prerequisite for health but studies from the perspective of the residents are limited in the literature. Although historically public health research has recognized the housing environment as an important determinant of health, there is a need for more research on how housing conditions influence residential well-being. **Aim:** The overall aim of this thesis was to examine factors and conditions associated with residential well-being and perceived safety in different types of housing areas and to compare safety promotion intervention designs based on residents self-expressed safety needs with corresponding designs developed by local government professionals. **Materials and methods:** A postal survey (response rate 56%, n=2476) and 11 focus groups (57 participants) were conducted among the residents in 3 small-scale housing areas with detached houses and 3 housing areas with blocks of flats in a Swedish municipality. The areas were geographically contiguous as each of the small-scale areas bordered on an area with blocks of flats. The study municipality is a designated member of WHO Safe Community network that have signed up to work in line with the indicators developed by WHO Collaborating Centre on Community Safety Promotion. Narrative data from a postal questionnaire were used to analyze the lay perspective and identify features perceived to be necessary to feel safe by residents in areas with blocks of flats and small-scale housing areas. Quantitative data were used to examine correlates of local safety-related concerns through a factor analysis. Logistic regression analysis examined associations between high-level scores of the safety-related dimensions found and area-level crime rate and being a victim of crime, area reputation, gender, age, education, country of birth, household civil status and type of housing. To examine how self-assessed area reputation is associated with social trust and residential well-being, a multilevel logistic regression analysis was performed using quantitative data, controlling for the random effect of neighbourhood- and individual-level socio-demographic factors. Data from focus group interviews were analyzed to identify mechanisms of how neighbourhood reputation was established. The quality function deployment (QFD) technique was used in a case study to integrate residents' demands into the design of safety promotion interventions in housing areas. The resulting design was then compared with the safety intervention programme designed by professionals at the municipality

administrative office. The results from this comparison were then investigated to identify improvements for the indicators for Safe Homes in the Safe Community programme. **Results:** The residents' narratives showed that a stable social structure in the housing area was perceived to be the central factor in a safety-supportive residential environment. Whereas maintenance of good and reassuring relations was emphasized in small-scale housing areas, support for management of poor or even fear-provoking neighbour relations was requested from areas with blocks of flats. The crime rates were lower and safety-related concerns were less in small-scale housing areas. Three composite dimensions (CD) of perceived residential safety were identified: structural indicators of social disorder (CD 1); contact with disorderly behaviour (CD 2); and existential insecurity (CD 3). Area-level crime rates and individual-level variables were associated with dimensions (CD 1) and (CD 3), but only individual-level variables were associated with dimension (CD 2). The level of residential well-being and social trust was higher in small-scale areas. The housing area reputation was found to be strongly associated with safety-related concerns, residential well-being and social trust. The area reputation also seemed to be a determinant of position in the local social structure; residents were found to position themselves in a rank order. The QFD analysis showed that the initiation and maintenance of social integrative processes in housing areas were the most highly prioritized interventions among the residents, but the analysis did not highlight the safety needs of several vulnerable groups. The Safe Community programme designed by professionals did not address the social integrative processes, but did cover the vulnerable groups. **Conclusions:** Area reputation is an important and probably underestimated dimension in the development of residential well-being and perceived safety. The QFD technique can be added to the methodological toolbox for residential safety promotion. The technique is particularly suitable for providing a quality orientation from the lay perspective on safety promotion in local residential areas. The current Safe Homes concept in the Safe Community programme would benefit from being widened to Safe Housing.

LIST OF PAPERS

This thesis is based on the following papers, which are referred to in the text by their Roman numerals I-IV. The published papers have been reprinted with permission of the journals.

PAPER I

Residents' perspectives on safety support needs in different types of housing areas.

Kullberg, A., Nordqvist, C., Timpka, T., Lindqvist, K.
Submitted.

PAPER II

Correlates of local safety-related concerns in a Swedish Community: a cross-sectional study.

Kullberg, A., Karlsson, N., Timpka, T., Lindqvist, K.
BMC Public Health 2009; 9:221.

PAPER III

Does the perceived neighborhood reputation contribute to neighborhood differences in social trust and residential well-being?

Kullberg, A., Timpka, T., Svensson, T., Karlsson, N., Lindqvist, K.
Journal of Community Psychology, 2010; 38(5): 591–606.

PAPER IV

Integrating residents' demands into the design of safety promotion interventions in housing areas: a case study application of quality function deployment in a Safe Community program.

Kullberg, A., Nordqvist, C., Lindqvist, K., Timpka, T.
Submitted.

INTRODUCTION

Adequate housing is a human right and to have a secure home to live in is one of the fundamental elements for human dignity, physical and mental health (United Nations, 1991). Housing conditions are central for every human being and can either enhance or damage our health and residential well-being. Historically, public health research has addressed the negative consequences of poor housing standards on health and well-being (Rosen, 1993). Housing conditions have been seen as an important area for research and interventions for decades, but the focus has often been narrow, concerning mostly hard factors, such as sanitation and hygienic standards (Shaw, 2004; Fuller-Thomson et al, 2000). However, in the last decade there has been a growing literature on the direct and indirect links between housing and health (Lawrence, 2010) related also to soft aspects in the housing environment (Shaw, 2004, Macintyre & Ellaway, 2003). The research on links between housing and health constitutes a multidisciplinary field, and there is still no definition of healthy housing that considers the wide range of factors that represent the quality of the housing environment (Bonney et al., 2007). In current research, one of the most often discussed health threats related to the housing environment is concern about the safety of the residents and their feeling of well-being (Bonney, 2007; Evans et al., 2003; Ormandy, 2009; van Kamp et al., 2004). A term that specifically addresses well-being in relation to housing is missing (Searle et al., 2009). The safety concept is broad and can be understood as an objective condition, for example, injury or crime rates, or a subjective phenomenon. Perspectives of residents' perceived safety are limited in the literature.

This thesis has the ambition to provide insight into perceived safety-related concerns and residential well-being in different types of housing areas in Sweden.

BACKGROUND

Towards improved housing standards in Sweden

During the 1930s the general housing standard in Sweden was one of the worst in Europe (Donner, 2000; Nordström, 1938). To a large extent, houses in the growing urban areas were overcrowded. In order to develop 'the modern' in social theory and political policy, industrial mass production methods were used to build homes for workers, and produce inexpensive but robust furniture with high sanitary standards and a high degree of thermal comfort at reasonable cost. In the welfare state programme, the concept of 'the Swedish Folkhem (the people's home)' was introduced as a metaphor for an entire nation embraced by the warm atmosphere of a family home in which the members take care of each other (Rådberg, 1997).

For several decades housing policy was an important government issue and massive subsidies have been transferred into limited-profit municipal housing companies (in Swedish: *allmännyttan*) with public participation through administrative boards involving local authority representatives. Thus, Sweden adopted a social and economic integrative approach to make the public housing sector an attractive tenure form open to everyone (Öresjö, 1997).

In response to the lack of housing with decent standards in the 1960s, an intensive building period began. Between 1961 and 1975 around 1.4 million dwellings were produced, including the new nationalized housing programme, the Million Programme, for which slightly more than one million dwellings were built (1965–1974). Of those, one-third were small-scale detached houses, less than one-fourth were high-rise buildings (with 5 floors or more), and the remainder were dwellings of moderate-size in 3- to 4-floor high multifamily blocks of flats. The houses of the Million Programme were built in the big cities, many small cities and industrial municipalities (Reppen & Vidén, 2006). The development of high-standard housing for almost everyone was mostly achieved through loans from government authority administrations on easy terms to the municipality housing companies (Ekström von Essen, 2003). The municipality housing companies became the owners of around one-fourth of the total housing stock in Sweden (Lujanen,

2001). In order to build an equal and wealthy society, there was to be no explicit social housing built in Sweden (Arnstberg, 2000). Thus, no special houses targeting socio-economic disadvantaged groups were built in Sweden (Birgersson & Turner, 2006).

The political target was to build a welfare state that was less residentially segregated than the rest of Europe. The social ambition was to promote a mix of well-to-do families with low-income households in modern flats built to a high standard. The principle of the original urban planning for the neighbourhood setting was inspired from the concept of a neighbourhood unit with origins in the United States and England, and further developed in Sweden. It was envisaged that a mix of tenure (social mix) would work towards decreasing housing segregation. The local centre in a neighbourhood unit should be available within walking distance and be away from traffic thoroughfares. The residents should meet each other in a local school, day-care centre, on local transport, in a meeting hall and in local shops. The neighbourhood unit should be built in a way that strengthens the social interaction in a neighbourhood by activities and a rich social life for the residents (Holmqvist, 2009). The neighbourhood unit planning model reached a peak during the Million Programme (Sandstedt, 2001).

Thus, the distinctive traits of the Million Programme were industrial production, rationalism, architecture on a large scale and well planned dwellings (Arnstberg, 2000). Despite the ambitious goals, the programme was criticized for uniformity in architectural style of the buildings and poor outdoor settings. However, the programme had a rapid impact on the extent of overcrowding (defined space limit as “more than two household member per room, kitchen and living room uncounted”(SCB, 2004:33)), which decreased to only 2% in the period 1975–1985 and has remained constant at that low level since then (Blücher, 2001; SCB, 2004). But around 15% of the residents in Sweden were still staying in overcrowded dwellings in 2007, when space limit was defined as “a household is considered to be cramped unless each household member has a room, kitchen and living room uncounted”(SCB, 2009b:35). Overcrowding occurs mostly in the large Swedish cities (FHI, 2005). Moreover, almost half of the population (45%) has high space standards (in 2007), that is, “more than one room per household member when kitchen and living room uncounted” (SCB, 2009b:35).

However, the attractiveness of the areas with blocks of flat from the Million Programme was rapidly lost (Boverket, 2007) in favour of single-family houses. Many households moved from a rented flat to a detached house when they could afford to. In Sweden in 2007, 58% lived in detached houses or terraced houses and the rest lived in multifamily blocks of flats. In 2005, there were 3 forms of tenure in Sweden: owner-occupied detached houses, co-operative and rental flats. Today, the housing standard is generally high irrespective of tenure (SCB, 2009a).

Despite the political ambition to avoid residential segregation, Swedish cities are residentially segregated by socio-economics and ethnicity, just as most cities in Europe (Andersson, 2000). The process of segregation is that economically well-off residents move from disadvantaged housing areas (blocks of flats), and relatively less well-established residents move in. This pattern corresponds to a concentration of residents with relatively high income, living together in segregated small-scale housing areas (Andersson & Bråmås, 2004).

In several Swedish policy documents, residential well-being and safety are targeted in public health strategies in housing policies. Safety and residential well-being are often used without any expressed significant meaning, but implicitly they are understood to be a positive goal (Boverket, 2004, 2007; FHI, 2005).

Housing and the relationship with health and safety

Housing is described as more than just a building, embracing several dimensions of a social, psychological, cultural and economic nature (Lawrence, 2002). The concept of housing is complex and the World Health Organization (WHO) defined housing as a broad concept involving 4 interrelated elements: “the home, the dwelling, the community and the immediate environment (or neighbourhood)” (Bonney et al., 2009:3). The social, cultural and economic structure configured by a household at home and the sense of community within a neighbourhood are interlinked (WHO Regional Office for Europe, 2004).

Historically, public health research did address the negative consequences of poor housing standards on health and well-being. The housing conditions

have been seen as an important area for interventions for decades, but the focus has often been narrow concerning mostly sanitation and hygienic standards (Rosen, 1993; Wendt, 1994). Predominantly, the direct effect of the physical characteristics of the built environment has been studied (Hillemeier et al., 2003; Krieger & Higgins, 2002); for example, the effects of chemical and biological risk factors on health (Ineichen, 1993). Besides this research, studies on housing conditions and health and well-being have been relatively limited (Halpern, 1995; Macintyre & Ellaway, 2000) especially compared with the body of research on the effect of working conditions on health (Egan et al., 2008). However, in the last decade there has been a growing literature on the links between housing and health (Lawrence, 2010).

The WHO Regional Office for the Europe housing and health programme has performed a comprehensive study, the Large Analysis and Review of European housing and health Status (LARES) in 8 cities. The results show a strong link between the resident's appraisal of their housing quality and self-rated health status, irrespective of socio-economic status. The WHO concludes "that bad housing affects health for rich as well as poor residents" (Bonney et al., 2007:364). Many studies have provided evidence of the relationship between poor housing conditions and poor health (Thomson et al., 2001) but there is still no definition of healthy housing (Bonney et al., 2007).

In a review presented by Shaw (2004), the multifaceted aspects affecting health directly or indirectly at different levels related to housing are considered. In public health perspective, the links to health are complicated and besides the qualities of the physical environment, the meaning of housing influences the general well-being and social status of the residents.

Shaw (2004) suggests that the "soft" aspects of housing safety directly affect health and mental health at the individual and household level. In current research, one of the most relevant health threats related to the housing environment are concerns about safety from various perspectives (Bonney, 2007; Evans et al., 2003; Ormandy, 2009; van Kamp et al., 2004).

But it is not just the home and the dwelling that influence health and safety; the characteristics of the housing area and local amenities also play a part (Macintyre et al., 1993). Over time, policymakers and researchers have gone from predominantly focusing on the conditions in individual dwellings to paying more attention to the qualities of the neighbourhood (Lujanen,

2001). The neighbourhood concept has no overall established definition in the literature (Galster, 2001) but a housing area is a geographically limited area in which houses dominate the built environment. However, the quality of the physical and social environment in the neighbourhood is supposed to be strongest at the level of “the ‘home area’, (and) is typically defined as an area of 5–10 minutes’ walk from one’s home” (Kearns & Parkinson, 2001:2103). The boundaries of a housing area or neighbourhood are mostly defined by administrative division into various spatial scales. A housing area is also recognized by local people as an area with a name known to both its residents and outsiders (Macintyre et al, 2002).

Housing research on the relationship between place and health, residential well-being and safety is not based on one established theoretical model and there are therefore several concepts applicable in this research field. The issue of health inequalities, when the health outcome is unevenly concentrated among residents in different housing areas, concerns the causes of unequal distribution (Shaw et al., 2002). In the last decade, several studies have examined the importance of making a distinction between composition and contextual effects that may affect health (Macintyre & Ellaway, 2003).

Contextual health effects are thought to emerge from specific features in the physical, social or economic structure at neighbourhood level, for example, the level of income in an area influences the chances of being healthy. If it is a contextual effect on health, the effect should remain after control of what is believed to be confounders, for example, socio-economic position or individual health-related living habits. Since computer capacity and technology has developed, researchers can now use multilevel methods in public health research (Cummins et al., 2007). The composition effects on health are thought to emerge from a higher concentration of residents with a pattern of individual predictors of health such as health behaviour and education.

Hence, the question is to what extent does the social and/or physical environment of residence influence the health and well-being of the inhabitants, compared with the effect caused by the aggregate of the characteristics of the residents living there at the individual level, the composition. Studies in Sweden have found that if there is a relative socio-economic deprivation in the housing area, the people living in the area are at increased risk of myocardial infarction (Kölegård Stjärne, 2005). The suggested

distinction of the context or the composition effect as an explanation for neighbourhood variations in health outcome has been challenged. The critics argue that the distinction between the place and the residents in many cases is more subtle than clear (Oakes, 2003), whereas “people create places, and places create people” (Macintyre & Ellaway, 2003:26).

Public health studies have found neighbourhood variations to be linked to different health indicators because of environmental risks and housing conditions. Housing conditions are reported to contain mechanisms through which social inequalities are accumulated into health inequalities (Ormandy, 2009). Social inequalities between people are transformed into residential segregation and particularly socio-economic factors seem to be involved. Social gradients influence the choice of the area where people settle down and feed the trend of growing segregation and a widening social gap in Europe (Braubach et al., 2010).

Relatively low socio-economic status is associated with exposure to conditions in the housing environment that damage health (Braubach & Fairburn, 2010) such as crime, fear of crime and anti-social behaviour (Davidson, 2009). Residents’ perceived safety in their neighbourhood may also influence their physical activity (Wendel-Vos et al., 2007). The recently presented public health report from the WHO Commission on Social Determinants of Health expresses the need for priority research on the distribution of health and safety in urban society (CSDH, 2008).

In their comprehensive framework on “what constitutes a healthy neighbourhood” based on Maslow’s universal human needs (Maslow, 1999), Macintyre et al. (2002) present 5 features of a housing area that could be either health promoting or health damaging. In their framework, the first feature is “Physical features of the environment shared by all residents in a locality”, such as quality of air and drinking water and landscape and outdoor temperature. The second feature is “Availability of healthy environments at home, work and play”, such as provision of decent housing and safe playgrounds for children. The third feature is “Services provided, publicly or privately to support people in their daily lives”, such as a well-maintained outdoor environment, street cleaning and sufficient lighting, policing and health services. The fourth feature is: “Socio-cultural features of a neighbourhood”, which includes the history of a neighbourhood and the level of the collective social functioning such as “norms and values, degree of

community integration”, perceived unsafety and local crime rate. The fifth suggested feature is the reputation of an area that may influence the residents’ self-esteem and have an effect on who moves in and out (Macintyre et al., 2002:131).

Residential well-being

Acknowledging that there are other global and specific definitions of subjective well-being (Eid & Larsen, 2008), an established term that specifically addresses well-being in relation to housing is missing (Searle et al., 2009). The concept of residential well-being in this thesis is used to reflect residents’ physical, social, and psychological experiences of housing, encompassing notions such as contentment, satisfaction, attachment, control, identity and happiness (Braubach, 2007; Sundberg, 2001) (in Swedish: boendetrivsel). Nowadays, knowledge of residential well-being and related concepts is considered essential for urban design planning. In this context, Moser (2002) and Moser et al. (2002) have suggested that residents construct affective, cognitive, and behavioural relationships with the environment at different levels, where the personal and private space is the lowest level of the people–environment relationship, followed by the neighbourhood. Cooper (1974) suggests that the relationship with the dwelling and the immediate environment can either strengthen the self or challenge well-being by influencing our self-esteem. One mechanism by which this effect is mediated is through the possibility of regulating interpersonal contacts with others. It is essential to have our privacy needs satisfied but also to live a social life. To be attached to a dwelling place, a home seems to be important for well-being throughout the life-span (Hiscock, 2001). Residential well-being is a subjective summary measure with specific relevance to the housing environment.

Housing and safety dimensions

Safety is a broad concept and its meaning is interpreted with regard to the sector or science discipline involved, for example, public health, sociology, geography, criminology, architecture, environmental psychology, political science or urban planning (Maurice et al., 2001; Whitzman, 2008a). In the scientific literature, safety is used as an individual condition, an essential quality in society and as an outcome (Torstensson Levander, 2007; Zedner,

2003b). In Maslow's hierarchy of human needs, safety needs are considered to be the most important after the basic physiological needs (hunger, thirst) (Maslow, 1999).

The perspective of safety can either be defined by its absence or its presence. To feel safe and free from anxiety is understood to be a positive condition, and a resource in every-day life (WHO, 1986, 1998b). To a large extent safety is measured by its negative outcome, unsafety (or insecurity). This has been criticized because it does not express anything about the essential properties of perceived safety in itself, just what is perceived as not being safe (Reason, 2000).

In 1998, the WHO defined: "Safety is a state in which hazards and conditions leading to physical, psychological or material harm are controlled in order to preserve the health and well-being of individuals and the community. It is an essential resource for everyday life, needed by individuals and communities to realize their aspirations." WHO (1998b:7).

This definition outlines a holistic view of safety as a necessary concern of everybody. Safety is understood as an environment-orientated multifaceted concept. Moreover, the term has a broader understanding than just not being at risk for accidents or injuries or the absence of threat, violence or fear (Andersson, 1999). This means that safety includes both subjective and objective dimensions. The point of departure in Fig. 1 is that safety is a fundamental human need and hence "safety is a pre-requisite to the maintenance and improvement of the well-being and health of the population." It is also pointed out that "The effect of behavioural and environmental determinants on health and well-being is often a function of the level of safety attained." WHO (1998b:9).

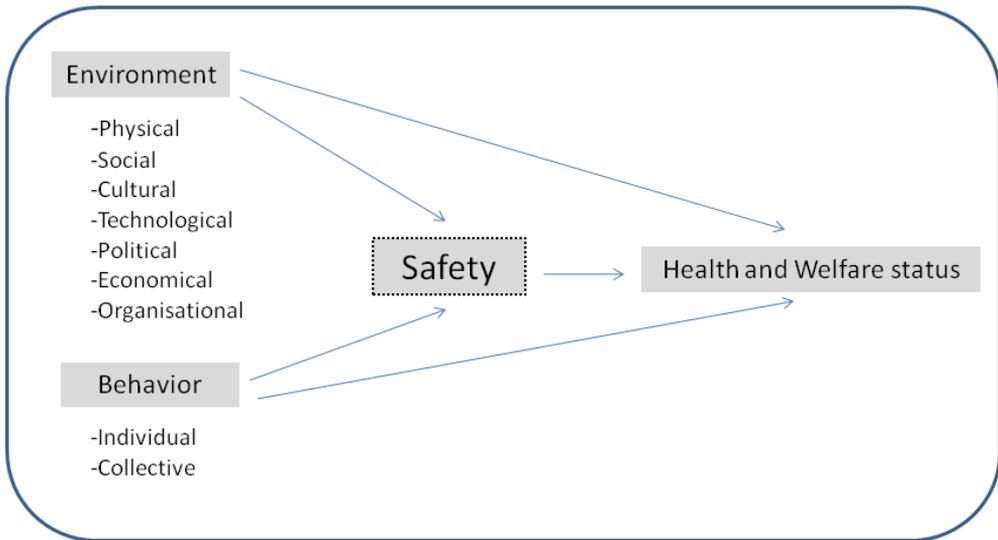


Fig. 1. Links between safety and health. Source: WHO (1998b:9).

The theoretical underpinnings behind the different perspectives on safety in the residential environment are not simple to distinguish from each other because they partly overlap. Moreover, the term safety has different connotations in different scientific disciplines. The suggested mechanisms behind a safety outcome are related to several theoretical approaches: the theory on fear of crime (Ferraro & LaGrange, 1987), broken windows (Wilson & Kelling, 1982) social disorganization (Shaw & McKay, 1942); social efficacy (Sampson, 2003), social capital (Putnam, 1993), social trust (Fukuyama, 1995) and urban planning of defensible space (Newman, 1972). Most of these theoretical perspectives have been developed in neighbourhoods in the United States and the United Kingdom. In the literature, the term security and the term safety are quite often used interchangeably (Nilsen, 2006). A brief description of the objective and subjective dimensions on safety in the residential environment is given in the following sections.

Safety as an objective condition

The perspective of safety as an objective condition comprises the freedom of unintentional hazards and risks (Maurice et al., 2001; Reason, 2000). Using this perspective, safety means to be protected from threats or a state of non-exposure to harm or injuries (Andersson, 1999). Safety as an objective

condition assumes that safety is an independent state with objective (real) sufficiently exact criteria (Maurice et al., 2008; Möller, 2005). From this perspective, safety has the meaning of the absence, or reduction, of injury incidence with its scientific roots in epidemiology and public health (Nilsen, 2007).

The terms safety and insecurity are often used in relation to crime control (Zedner, 2003a). Crime is suggested to be strongly related to health in the housing environment, both by direct exposure and indirectly by residents' perception of feeling unsafe (Kawachi et al., 1999; Shaw & McKay, 1942). The level of crime in a neighbourhood has been recognized as a key stressor in the residential environment, when measured in absolute numbers of reported crimes in the neighbourhood and from residents' personal experience of being a victim of crime (Baumer, 1985; Green et al., 2002). The objective status of safety as the absence of intentional violence, crime and threats has its roots in planning, architecture, psychology and criminology.

Safety as a subjective phenomenon

The perspectives of safety as a subjective phenomenon are related to cognitive, affective and behavioural elements (Zani et al., 2001) in the physical and social environment.

In the private sphere, perceived general safety is an ever-present concern in the home. The term ontological security was originally created by Giddens (1991) and further developed in relation to housing by Hiscock et al. (2001). The concept is understood as "a long term tendency to believe things are reliable and secure as opposed to threatening" Hiscock (2001:2). The sense of ontological security is suggested to be an unspecific endogenous sense of safety, specially important for residents as the home has the function of being the safe base in every-day life (Hill, 1996). Hiscock et al. (2001) studied whether tenure was linked to the level of sense of ontological security in the home environment. Owners were found to have a higher sense of ontological security than renters, but this was not independent of the features of the housing. Owners were found to live in homes of a higher material standard and they were located in more stable, high status areas.

In a residential area, there are visible signs in the physical environment that potentially lead to feelings of not being safe (Wilson & Kelling, 1982), such as physical incivilities or declining maintenance of buildings and the immediate environment, litter, and graffiti indicating a low sense of community (Halpern, 1995, 2005). In the environmental approach, it is implicitly understood that neighbourhood cleaning activities to remove the visible signs of incivilities improve the perception of safety among residents (Kamphuis et al., 2010).

Fear of crime is related to risk assessment, which depends on the concentration of objective risk in time and space, and on the presence of subjective perceived early signs of imminent hazard (Skogan & Maxfield, 1981). Fear of crime has also been found to have a significant negative influence on residential quality, and may have a negative effect on residents' mental health comparable with crime itself (Baumer, 1985; Green et al., 2002). Prolonged safety-related worry and fear of crime is suggested to yield behaviour modification because it potentially limits the residents' personal freedom. A consequence of safety-related worry may therefore be time-space inequalities with implications for physical and mental health (Bennett et al., 2007; Whitley & Prince, 2005) and relevant to how often the residents participate in physical activity in the neighbourhood (Shenassa et al., 2006).

Another aspect that potentially influences perceived safety is the way the local newspaper communicates crime in specific neighbourhoods. Newspaper headlines about local crime may result in attitudes that divide neighbourhoods into desirable and undesirable areas. Stories retold by neighbours who have been victims of crime may result in negative attitudes, and increase the perception of isolation among residents (Baum & Palmer, 2002; Heath, 1984). In an interview study undertaken in Sweden, the role of mass media in relation to fear of crime was investigated. The newspaper reports seemed to be clearly linked to fear of crime in the housing environment. One cause of the fear of crime underpinned by mass media was related to the lack of sufficient police resources, giving a sense of lack of control (Heber, 2007).

Social trust and the norms of reciprocity have also been associated with variations of perceived safety between neighbourhoods. Social trust has been described as the expectations we have of others; if the other person will be trustworthy in the future (Sztompka, 1998). In local neighbourhoods, face-to-face meetings occur frequently in daily life and often in socially homogeneous

groups such as classes or ethnic groups. Some of those local communities reinforce what Newton (1997:578–579) calls “thick” trust within them, generated by intensive interactions but producing distrust of the wider society. This type of local network is distinguished by rather exclusive social bonds in contrast to networks based on “thin” trust, which include more secondary relations in large-scale society such as in voluntary organizations. Thin trust is the consequence of what Granovetter (1973) called weak ties and thick trust is analogous to strong ties.

All social connections are maintained and developed on the assumption that the people involved have enough mutual confidence in each other. Trust overlaps with other concepts including life satisfaction, happiness and well-being (Delhey & Newton, 2003). Trust is also the core component of social capital, and could be seen as a source of, a form of, and an outcome of the available stock of social capital in a community. In a society with comparable high levels of trust, the social capital will accumulate in a positive circle (Putnam, 1993). Fukuyama (1995:26) defines that “social capital is a capability that arises from the prevalence of trust in a society or in certain parts of it.” The theory of social capital is not the focus of this thesis and is not discussed further.

Safety promotion

The term safety promotion was defined by the WHO in 1998 as follows: “Safety promotion is the process applied at a local, national and international level by individuals, communities, governments and others, including enterprises and nongovernmental organizations, to develop and sustain safety. The process includes all efforts agreed upon to modify structures, environment (physical, social, technological, political, economical and organisational) as well as attitudes and behaviours related to safety.” WHO (1998b: 11).

Safety can be enhanced at different levels (macro, meso and micro levels) and it has been acknowledged that the WHO’s holistic safety vision can involve a range of safety issues (Maurice et al., 2008). The promotion concept is meant to improve preconditions for safety and target something beyond the absence of disease, injuries, fear or threats (Andersson, 1999). Hence, safety is understood as a prerequisite for health and well-being (WHO, 1998b) and is thereby a

salutogenic resource in the lived environment. Researchers have paid attention to the parallels between health promotion and safety promotion. The concepts have been recognized as sister concepts with partly overlapping dimensions, but they have come to represent divergent traditions within public health science (Green & Tones, 2004; Welandar et al., 2000). However, safety promotion mainly refers to the prevention of unintentional and intentional injuries (Nilsen et al., 2004), and the empowerment processes per se remain to be developed. For both safety and health promotion, a key issue is coordination of top-down leadership of welfare state agencies with bottom-up and problem-oriented mobilization of local community resources, encompassing supportive environments (Timpka et al., 2009; WHO, 1991).

Community-based safety promotion programmes

In the past 30 years, the first community-based safety programmes were initiated at governmental level; the need for crime reduction and reduction of injuries was the driving force. Successive parallel strategies at the local community level were developed for crime and injury prevention during a series of international conferences that addressed the issue of a safe community approach (Whitzman, 2008b). The rationale behind the development and dissemination of community-based safety programmes represented new visions in organizing a preventive infrastructure to decrease the burden of crime and injuries.

The crime prevention path began with a United Nations conference held in Barcelona in 1987, followed by Montreal in 1989 (Whitzman, 2008a) and the Safer Cities Programme was adopted in 1996 by the UN-Habitat. The purpose of the programme is to build capacity to decrease urban insecurity at the municipality level through urban planning and prevention activities among policy makers and professionals (United Nations, 2010).

In urban planning, the role of the physical environment and its influence on crime has been theorized by the work of Jacobs (1961) who pointed out that distinct borders between private and public spaces in the built environment are essential to prevent crime. Jacobs (1961) also suggested that dwellings should be provided with windows and doors directed towards the street so that entry points could be kept in sight. Another model for crime prevention is to build housing with defensible space according to Newman (1972). Newman

argued for a correlation between design and function of the built environment and crime rates. In New York, he observed that in small-scale neighbourhoods the residents had better control of the shared outdoor space compared with residents in blocks of flats. Newman (1972) suggested that buildings with a good overview from inside were linked to lower factual crime rates. In the 1980s, Coleman (1990) corroborated Newman's design model when she investigated a large number of dwellings in the United Kingdom. Coleman (1990) argued on the importance of refraining from building neighbourhoods with high-rise houses as those environments were found to cause anonymity. Anonymity in high-rise buildings was in turn believed to decrease informal social control, which is a mechanism against crime (Coleman, 1990).

In criminology, the role of the social environment and its influence on crime has been theorized by the work of Shaw and McKay (1942) in their influential theory on social disorganization. According to this theory, it is structural conditions such as poverty, unemployment and high mobility rate in a neighbourhood that are the underlying causes of the negative process of low informal social control that have an effect on crime (Shaw & McKay, 1942). It is assumed that a relatively high crime rate in a neighbourhood is a result of a high mobility rate and low stability of the social organization between residents, which in turn impairs informal social control. The theory of collective efficacy by Sampson (2003) is a development of social disorganization theory. Sampson (2003) stressed the mutual willingness of people in the same neighbourhood to co-operate and thereby to support public order. Situational action theory is an actual crime prevention theory with an ecological perspective, which also focuses on social interactions between residents. Here, crime is understood as breaches of moral rules of how to behave and crime is studied in its context to address crime situations (Wikström, 2006). There are many different local community-based crime prevention projects running in Swedish municipalities (BRÅ, 2010).

A starting point for injury prevention was the WHO conference in Alma Ata in 1978. The conference declaration called on a community-based approach for health promotion interventions to occur in other settings besides the health services (WHO, 1978). The concept of community participation was introduced and cross-sectional collaboration was accentuated. At the WHO conference held in Ottawa in 1986, the focus was on the process of health promotion at local community level and in settings such as neighbourhoods.

In the wake of the conferences, the WHO supported the development of Safe Communities, which were constituted in 1989. The first designated Safe Community was the municipality of Lidköping in Sweden (1989) (WHO, 2010a). The Safe Community movement focuses on systematic intentional (violence) and unintentional injury prevention in communities by sustainable multidisciplinary collaboration (Rahim, 2005). In the model, specific measures are combined with overall preventive planning targeting the 4 action levels: individual, group, organizational and the community level (Svanström & Haglund, 1987). The core strategy is to use epidemiological data on injury rates in combination with the existing local community structures as the basis for injury prevention (Welander et al., 2000). To date (August 2010), there are 200 designated Safe Communities agreeing to work according to 6 indicators developed by WHO Collaborating Centre on Community Safety Promotion. Seventeen of these are situated in Sweden (WHO, 2010d). Special setting-orientated safety promotion activities have been further developed within the Safe Community movement. One set of special indicators that has been developed is Safe Homes in a Safe Community Setting. The indicators are (WHO, 2010e):

1. An infrastructure based on partnership and collaborations, governed by a group of managers, voluntary organizations representatives, technical staff and safety professionals that is responsible for safety promotion in their homes; The group should be chaired by a local administration representative with a Voluntary Organisation representative as a co-chair;
2. Safe Homes policies developed by the Group and adopted by the Voluntary Organisation in a Safe Community setting;
3. Long-term, sustainable operational programs covering both genders, all age groups, environments, and situations;
4. Programs that target high-risk groups and environments, and programs that promote safety for vulnerable groups;
5. Programs that document the frequency and causes of injuries – both non-intentional (accidents) and intentional (violence and self-inflicted);

6. Evaluation measures to assess their policies, programs, processes and the effects of change;
7. Ongoing participation in Safe Homes networks – at community, national and international levels.

To the best of our knowledge the indicators for Safe Homes have seldom been implemented or studied in Scandinavia. A rare example of their use is the effort to create safe and healthy residential care homes that has been reported from Hong Kong (OSHC, 2010).

Supported by the WHO, the Healthy Cities network was established 1986 in Europe. The Healthy Cities programme targets improvements in urban design and aims to improve the health of the residents by decreasing urban segregation. One strategy is to place health issues, covering the physical and social living environment, on the local policy agenda and thereby strengthen public health as a resource for the city. The network is based on the WHO European initiative on healthy urban planning (WHO, 1998a, 2009). The rationale behind the actions includes a core theme, healthy urban environment and design, with the expressed aim of offering residents in a Healthy City well-being, safety, social interaction and a sense of pride. A key topic is to work with home safety and injuries in developing the Healthy City. In Sweden, Gothenburg is designated a Healthy City and the outline of the measurements encompasses a broad safety-enhancing perspective (WHO, 2003).

Hence, there are several parallel ways of conceptualizing community-based safety programmes: In these practices, neighbourhoods are a setting for safety promotion interventions. Notwithstanding the WHO's holistic definition of safety (WHO, 1998b), the safety promotion interventions in communities embrace objective measures of injury prevention (Nilsen, 2006) or crime prevention (Kitchen & Schneider, 2002) to a high degree. The theoretical underpinning of the delivery of these programmes is largely based on professional expert knowledge, and a top-down model is mostly applied (Cozens, 2007; Timpka et al., 2009). In contrast, setting-orientated safety promotion strategies generally refer to a broader model, inspired by a bottom-up approach to enhance safety and the sense of well-being of residents in a setting or community with the purpose of combining measures on objective and perceived safety (Maurice et al., 2008). To systematically pay attention to

residents' experiences and to incorporate these in interventions has been suggested as essential when promoting safety in local settings (Maurice et al., 2001). In communities where Safe Community programmes for local safety promotion have been implemented in practice, politicians and administrators have also demanded methods for effective two-way communication with residents (Nordqvist et al., 2009). Tools to involve and integrate the voice of lay persons into intervention design in safety promotion have previously been found to require further development (Timpka et al., 2009).

Quality function deployment, QFD, is a technique that can be used to integrate the needs of lay persons into health service design. QFD is a set of tools and practices that helps to overcome barriers between service providers and their clients by forming a process for structural planning of the actual service. QFD includes techniques for introducing personal preference data from clients into the design stage of the service planning. QFD had its origin in Japan in the 1960s within psychology and marketing (Akao, 1997). It spread globally, mainly in the business world. It was later found to be of value as a method to increase socio-medical services (Hallberg & Timpka, 1997) and in planning preventive programmes for improved quality of the implementation process of preventive community-based programmes (Daniels et al., 2008). Despite the broad application of the QFD technique, to the best of our knowledge this tool has not been used to improve the quality of community-based interventions in health and safety promotion.

Summing up background

The housing environment is recognized as an important health determinant. Current research shows that the relationship is a web of factors and conditions that interact in a complex mix. For instance, the framework of Macintyre et al. (2002) includes 5 features ranging over housing infrastructure, qualities of physical environment, services provided in the local area and several socio-cultural features of the collective social functioning in a neighbourhood. The reputation of an area is suggested to either be a health promoting or health damaging feature (Macintyre et al., 2002). Thus, the public health research field on living conditions in the housing environment involve areas and associations that need to be further elaborated and also focused on health and safety disparities. Today, the number of studies on employee conditions in the workplace and health promotion projects addressing working people vastly

exceeds those addressed to residents. Given that the home and the housing area is the basis of every-day life and given that the residential well-being and perceived safety are essential resources that may influence health, there is a need to increase our understanding of the factors and conditions that may promote those qualities.

Many studies on housing and neighbourhood conditions related to residential well-being and safety focus on situations in relatively large cities and in areas with relatively poor housing conditions. Few studies have been undertaken in relatively moderate-sized municipalities with good housing stock available to all residents. Based on the historical policy background, an interesting question is whether there are disparities in residential well-being and perceived safety when comparing residents in housing of a good standard, in geographically contiguous, but different types of housing areas in a Swedish municipality. This thesis seeks to contribute to knowledge on whether there are differences in the level and distribution of residential well-being and perceived safety in this specific housing structure and configuration of housing areas, and if so, shed light on conditions that may contribute to those differences.

Despite the body of research on safety in the residential environment, the perspective of the residents themselves is lacking. Research on how to integrate the residents' perspective with safety support needs is limited in the literature but may help in developing local community-based safety promotion programmes.

AIMS

The overall aim of this thesis is to examine factors and conditions associated with residential well-being and perceived safety in different types of housing areas and to compare safety promotion intervention designs based on residents' self-expressed safety needs with corresponding designs developed by local government professionals.

The specific aims for the studies included are:

- To identify factors perceived by residents to be necessary for feeling safe in areas with blocks of flats and detached houses (paper I).
- To examine environmental, socio-demographic, and personal correlates of safety-related concerns at the local level in contiguous neighbourhoods in a Swedish urban municipality (paper II).
- To examine the associations between neighbourhood reputation and residential well-being and social trust in socio-economically contrasting neighbourhoods (paper III).
- To compare safety promotion intervention design based on residents' self-expressed safety needs with interventions designed by local government professionals and to use the results to suggest improvements for the indicators targeting Safe Homes within the Safe Community movement (paper IV).

MATERIALS AND METHODS

Empirical setting

The study municipality in this thesis had 41,888 inhabitants (November 2005), and is one of 290 municipalities in Sweden. The study municipality is one of the 17 designated members of WHO Safe Community network in Sweden that have signed up to work in line with the indicators developed by WHO Collaborating Centre on Community Safety Promotion (August 2010) (WHO, 2010c).

Six housing areas with a total of 6386 adult residents aged 20–79 years (study population) were investigated in the present study. The selection of the housing areas was intended to be representative of the predominant forms of housing areas in Sweden in 2005: owner-occupied detached dwellings (57%) and owner-occupied or rental flats (41.3%) (SCB, 2009a).

In order to choose areas recognized by local people as geographically distinct housing areas, with a name known to both its residents and outsiders such as local mass media, local municipality officials were consulted. The municipal administrative office provided a map of the 6 areas defined by the Swedish administrative subdivision of geographical areas for statistical purposes, NYKO (in Swedish: nyckelkodsområden), which was found to be appropriate. The NYKO area divisions were constructed by the municipality authorities for use in the municipality planning process (SCB, 2010).

The 6 study areas in this thesis were given fictitious names indicating the type of property. The 2 small-scale areas (Alpha-house and Gamma-house) with single-family houses were built from 1966 to 1975. The area Beta-mix was built in 1951–1960 and the character of the housing is mainly small-scale but the tenure is mixed. Three areas, Alpha-flat, Beta-flat and Gamma-flat, with mainly blocks of flats were built from 1961 to 1970. This means that except for Beta-mix, the areas studied were built during the Million Programme era.

The 6 housing areas selected were geographically located two-by-two, i.e. 2 areas were spatially contiguous to each other in 3 different neighbourhood

settings (Fig. 2). All residents, whether living in owner-occupied detached houses or owner-occupied or rental apartments, lived in housing of a high material standard with regard to kitchen, hygiene and heating facilities. The proportion of non-residential land use was higher in the 3 areas with blocks of flats. The 2 areas within the 3 settings were functionally connected, sharing a small local community centre with both public and private services such as a grocery store, day-care centre, bus transport and a common public school, all with good access irrespective of the living area within the setting. The residents also shared a fair-sized green space for recreation, within each setting. The proximity to playgrounds and to small-sized parks was within 300 m and bigger and quiet nature areas were within 500–700 m.

The characteristics of the areas based on recorded data are presented in Table 1. The population in each of the 2 areas within the 3 settings contrasted with the other demographically and socio-economically. The residents in the small-scale areas were more socio-economically advantaged and more residentially stable than the residents in areas with blocks of flats. Motor-vehicle density was higher in the small-scale areas (Table 1).

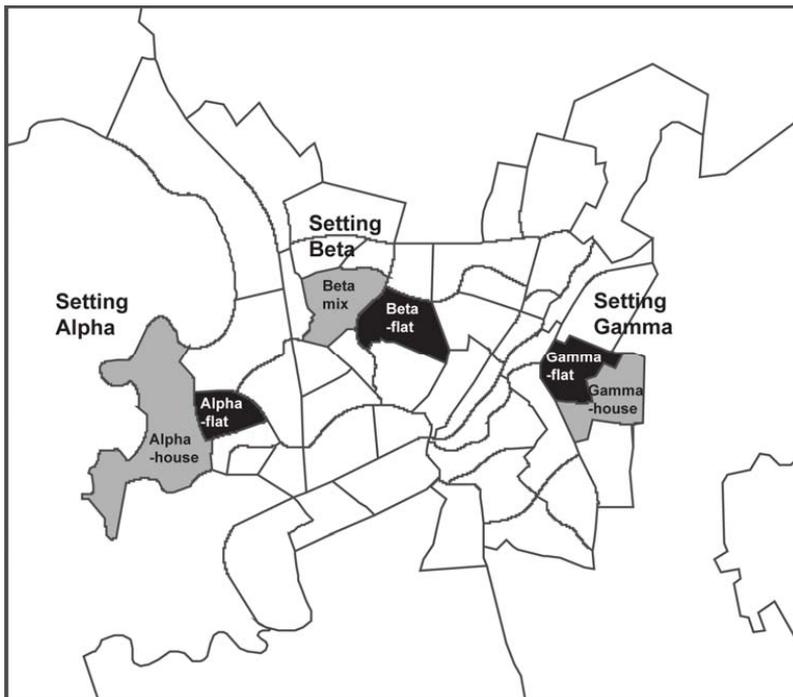


Fig. 2. Geographic location of the housing areas studied.

Table 1. Characteristics of the housing areas studied^a

	Geographic location					
	Setting Alpha		Setting Beta		Setting Gamma	
	Alpha-house	Alpha-flat	Beta-mix	Beta-flat	Gamma-house	Gamma-flat
Total population ^b	1423	1918	1857	1680	794	1364
Area (km ²) ^a	1.76	0.36	0.63	0.6	0.61	0.49
Residents by type of property ^a						
Block of flats (%)	10 (0.7)	1918 (100)	761 (41)	1675 (99.7)	0	1262 (93)
Single detached, row duplex houses (%)	1413 (99.3)	0	1096 (59)	5 (0.3)	794 (100)	97 (7)
Period of construction ^a	1966–1975	1966–1970	1951–1960	1966–1970	1971–1975	1961–1965
Resident turnover (%) ^c	107 (7.5)	363 (18.1)	272 (14.4)	289 (17.4)	45 (5.8)	262 (18.4)
Motor-vehicle density (no./1000 inhabitants) ^d	430	270	380	303	464	291
Mean for whole municipality (index 100)						
Gainfully employed 20–64 years ^e	114	81	102	80	104	85
Disposable income >20 years ^e	131	77	95	66	122	75
Housing allowance ^f	97	113	79	89	93	100
Social allowance ^g	48	109	84	124	27	131
>12 years in school (%) ^b	264 (26.1)	126 (9.5)	281 (21.5)	142 (12)	98 (16.9)	98 (9.7)
High-income residents (%) ^h	222 (22)	44 (3.3)	202 (15.4)	35 (3)	81 (14)	39 (4)

^a Data source: Statistics Sweden.

^b Date 30 September 2005.

^c Residents turnover 1 January 2005 to 31 December 2005.

^d Date 31 December 2004.

^e INKOPAK, Statistics Sweden, 2004.

^f Housing allowance to families with children (bostadsbidrag) as well as for retired (bostadstillägg).

^g The social allowance should give a reasonable standard of living.

^h High income defined as $\geq 300,000$ Swedish crown (SEK)/year in 2004. US\$1=SEK6.6; EUR1=SEK9.0; date 30 December 2004.

Data sources

Focus group interviews

In order to gain deeper understanding of how residents experience and discuss their neighbourhood and housing qualities and perceive safety and residential well-being, 11 focus group interviews (Morgan, 1996) were conducted. Focus group interviews are appropriate because they give possibility to access peoples' experiences, attitudes and their desired goals and obscurities in the group dynamics (Wibeck, 2000). Focus group interviews also formed some basis in the planning of the questionnaire in this thesis (Bischoping & Dykema, 1999).

To obtain knowledge about the housing areas, the local housing conditions and the neighbourhood unit, each of the study settings was personally inspected by the author by walking in each area. Professionals in the municipality administration and the municipality housing company were contacted and information on the neighbourhoods was collected in order to add knowledge and improve the interview discussions.

The author got the opportunity to be present at regular meetings between the landlord of the municipality housing company stock and the residents. Information about the research project was given to the residents at those meetings and the residents were asked to participate. Individuals aged 20–79 years were recruited either (a) from a regular landlord information meeting (26 participants), (b) by snowball recruitment from the local municipal administration (3 participants), (c) local authority consultation (6 participants), or (d) by a newsheet in the letterbox followed up by a telephone call (22 participants). The newsheet contained information on the research project and was put in the letterbox of detached houses by the author. The telephone calls were also made by the author.

All 57 informants lived in the areas investigated and at least one focus group interview was carried out in each area. The interviews took place in the participants' area of residence, in the local school (4 interviews) or in a flat provided by the local landlord in the area (7 interviews). All of the interviews were carried out in the evening and took place without interruption in rooms well suited for the interviews.

Before the interview started, the participants were informed that they were not obliged to participate in the interview and that they could withdraw at any time, without explanation. The semi-structured interviews were recorded on tape (about 55–100 min each) and followed a topic guide with open-ended key questions related to the resident's experiences of living in their area, neighbourhood characteristics, neighbour contact, perceived well-being and comfort, sense of trust and safety (Appendix A). The residents were not interrupted when they added new relevant aspects outwith the topic guide.

The interviews were conducted between the last week in March and the third week in October 2005. All interviews were performed by the author. Five of the 11 semi-structured audio-taped sessions were transcribed verbatim by the author and the rest were transcribed by a professional.

Of the 57 informants, 40 were female and 17 were male. The mean age of the participants was 60 years (range 28–77 years) and the range for the number of years living in the area was 1–47 years (median 21 years). Table 2 provides an overview of the focus group sessions.

Table 2. Summary of the focus group sessions

	Geographical location					
	Setting Alpha		Setting Beta		Setting Gamma	
	Alpha-house	Alpha-flat	Beta-mix	Beta-flat	Gamma-house	Gamma-flat
Number of focus groups	2	1	1	3	1	3
No. of people interviewed (males + females)	14 (7 + 7)	7 (1 + 6)	3 (1 + 2)	15 (4 + 11)	8 (3 + 5)	10 (1 + 9)

Questionnaire

A cross-sectional survey was developed for the Swedish context. The questionnaire was constructed by the author for this thesis. The aim of the survey was to collect the residents' perceptions of the quality of their housing environment and their subjective safety, residential well-being and health status. In order to use validated and/or established questions, the outline of the survey was devised by first going through the multidisciplinary literature (Cross & Kuller, 2004; National Statistics, 2002; Nykvist & Boström, 2004; SCB,

1997, 2004; Thomson et al., 2001; WHO Regional Office for Europe, 2000, 2001, 2004).

The entire questionnaire comprised 67 items, several with attendant questions, embracing 127 questions in total. The items were related to demographic information (age, gender, education, dwelling characteristics, years living in the area). Questions on qualities in the housing environment, residential well-being, safety support need, perceived safety, fear of crime, injuries, social trust, civic engagement, social participation, health-related behaviour and self-rated health were also asked. The questionnaire was tested in the Technical Laboratory of Measurement, Statistics Sweden, before use. The complete questionnaire was piloted in 22 dwellings by the author. Those steps in the development of the questionnaire gave the opportunity to improve the formulation of the questions for better understanding and consistency.

The study population was defined as all people aged 20–79 years who lived in the 6 housing areas under study. From a total of 6386 inhabitants aged 20–79 years, 2510 individuals were randomly selected by Statistics Sweden. Thirty-four of the selected people no longer lived in the area (deceased or moved away). A total of 2476 individual questionnaires were distributed by Statistics Sweden in the last week in October 2005. Four weeks later, a reminder letter with a new questionnaire was posted to non-respondents. The survey was completed in December 2005.

Of the 2476 residents aged 20–79 years who received the questionnaire, 1390 returned the questionnaire, giving an overall response rate of 56%. The response rate varied between areas and was the highest in area Gamma-house (detached houses), 158/231 (68%), and lowest in area Gamma-flat (blocks of flats), 175/391 (45%).

Questions used in the papers

Papers I and IV

The open-ended question used in papers I and IV is original and was constructed for this thesis with the purpose of collecting narrative data on how residents themselves perceive and reason about their own safety need in their

housing area: *What features in your residential environment are vital for you to feel safe?* (Appendix B).

Paper II

As there is no consensus on the term safety-related concerns (Bonney, 2007), alternative concepts describing the term from a set of relevant variables was used (Appendix B).

Safety-related concerns were derived from a set of neighbourhood disorder questions, which were adapted from the Swedish Living Conditions Survey (SCB, 1999). The participants were asked to assess each question using a 5-point Likert scale: to what extent they perceived damage and/or graffiti, littering, car theft, disturbance from neighbours. The respondents were also asked to what extent they perceived tobacco smoking and consumption of alcohol or use of other drugs to be an annoyance in their housing area. Participants were asked to respond using a measurement scale from "yes, very annoying" to "no". The respondents were also asked to estimate how often their sleep was disturbed because of street noise or noisy neighbours. This question was original for this study, but developed by the WHO (Bonney et al., 2004).

Questions about general safety and fear of crime were asked to measure perceived safety based on previously used research questions (with minor modifications). The item, "Do you feel safe or insecure in your housing area in the daytime?" and the item "Do you feel safe or insecure in your housing area during the evening and at night?" was intended to capture time and space aspects of perceived safety in the residential environment. To measure fear of crime the question, "Do you refrain from going outdoors because of fear of crime?" was used as in previous research (Ferraro & LaGrange, 1987; Green et al., 2002; Nykvist & Boström, 2004).

Environmental and personal correlates were measured by a question on whether the residents had personal experience as a victim of crime during the last 12 months within the housing area. The reply option was "yes" or "no" and the item was original but modified from Statistics Sweden (SCB, 1999). The participants were also asked to rate their perceived area reputation using a Likert scale: from "very good" to "very bad". This question is original, but developed from studies in the west of Scotland (Macintyre et al., 1993).

Paper III

To operationalize residential well-being the respondents were asked to estimate “How happy are you living in your residential area?” on a 5-point scale from “very happy” to “very unhappy” adapted from the Swedish Living Conditions Survey (SCB, 1999). Social trust was measured by the item “To what extent do you think you can trust people in your residential area?” assessed on a 5-point scale from “to a very large extent” to “to a very small extent”. This item was adapted from Kawachi et al. (1997). To operationalize area reputation, the same item as in paper II presented above was used (Appendix B).

Police-reported crime records

Registered data on crime rates for each housing area were collected from the local police office. The data on reported crime were grouped into 5 categories according to the Swedish penal code: (a) crime against life and health; (b) crime against freedom and serenity; (c) theft and robbery; (d) crime of damage; (e) other crimes. Information for 3 years (2003–2005) was included to increase area stability for reported crime. The area level crime rates were represented as the mean number of police-reported crimes per 1000 inhabitants per year.

Safe Community programme: data from the application document

The municipality in this study has been a designated Safe Community for more than 20 years. The actual Safe Community programme was described in detail in an application for renewed contract with the WHO Collaborative Centre on Community Safety Promotion at the Karolinska Institutet in Sweden (WHO, 2010b). The application document was analysed to assess the required safety needs and the design attributes of a safe housing environment in the case-study municipality.

Data analyses

Paper I

Content analyses

A summative content analysis was conducted (Hsieh & Shannon, 2005) on the narratives from the responses of one open-ended question in the questionnaire: "What features in your residential environment are vital for you to feel safe?" Among the 1390 questionnaires returned, 787 contained narrative data in response to this question.

First all texts were read by the first author (AK) and the second author (CN) independently to obtain a general view. Then all data units were initially coded in relation to the study aim. In the third step a preliminary coding scheme was devised that was discussed among all authors. In the fourth step, the coded statements were sorted into categories and sub-categories were identified. In step 5, a latent content analysis was established during discussions among the authors. In step 6, the final codes were established and sorted into categories and sub-categories. In step 7, similarities and differences between the area profiles (blocks of flats and small-scale housing areas) were identified. Finally, a analysis was conducted to assess differences in response patterns between residents in the 2 configurations of area profile. The frequencies of responses with regard to qualitative category and residential area were calculated.

Paper II

Statistical analyses

A factor analysis was performed to derive simplified dimensions of safety-related concerns from the set of 10 variables measuring several aspects of perceived safety. The respondents were categorized according to geographic housing area and neighbourhood setting. The primary variables included in the analyses were the extent of graffiti, car theft, litter, disturbance by

neighbours, disrupted sleep, disturbance by tobacco smoking and alcohol consumption, sense of safety during the day, evening and at night, and fear of crime. The extraction method was principal component analysis and an orthogonal rotation was performed with varimax and Kaiser normalization using the option of replacement of missing values with the mean in SPSS (Hair, 2006).

For each dimension of perceived safety identified, the factor scores were computed for each respondent. Because of the skewness of the distribution of the factor scores ($p < 0.001$) (D'Agostino et al., 1990), these were dichotomized by the upper quartile, for use as input variables in subsequent statistical analyses.

A total of 1097 individuals with no missing values for risk item and condition variables were included in the subsequent analyses. Logistic regressions with robust estimates of standard errors were performed to examine associations between derived concepts of safety-related concerns and area- and individual-level variables. Clustering effects within each neighbourhood were taken into account by calculating robust estimates of standard errors in STATA. The multivariate adjusted odds ratios with 95% confidence intervals were estimated for total area crime rate (area-level characteristic), having been a victim of crime, area reputation, gender, age, education, country of birth, household civil status and type of housing (small house versus flat) (individual characteristics). A level of 5% was considered to be statistically significant.

Paper III

Statistical analysis

As a first step, multilevel logistic regression analyses were performed to examine associations between area reputation and residential well-being and social trust, controlling for the random effect of neighbourhood and individual level socio-demographic factors.

As a result of the hierarchical structure of the data in which individuals are nested within each neighbourhood, residential well-being and trust were modelled using multilevel analysis to account for this hierarchical clustering

(Snijders & Bosker, 1999). Because of the skewness of the distribution of the responses (D'Agostino et al., 1990), the responses were dichotomized by the upper quartile for use as outcome variables in subsequent statistical analyses. The following potential individual-level confounders were controlled: age, gender, education, country of birth, length of residence and tenure (Braubach, 2007; Guite et al., 2006; Oh & Kim, 2009; Shaw, 2004). The multilevel logistic regressions were performed in STATA to analyse the association between age, gender, education, country of birth, length of residence, tenure, and area reputation as individual-level variables and residential well-being and trust, controlling for the random effect of neighbourhood. Multivariate adjusted odds ratios are provided with 95% confidence intervals. A level of significance of 5% was considered to be statistically significant.

Qualitative analysis of focus group interviews

In a second step, data transcriptions from 11 focus group sessions with 2 to 8 participating residents in each group were analysed. In order to describe and understand the data, an explorative approach was used (May, 2002). To assist the analysis, the transcripts were entered into the NUD*IST software package, version 4.0. The analyses were undertaken in steps. Initially, the transcripts were read by the group of researchers (the authors) (1) to become familiar with the data and to get a general view of the raw data; (2) the data were then given a preliminary code to identify statements with information on well-being, social trust, and area reputation; (3) after discussions, statements were recognized on area reputation and their interactions that had an effect on social trust and residential well-being; (4) the patterns of qualities in the statements were established progressively and were then categorized and examined by the research group.

Mixed method small-scale theory construction

In the third step, the central results from the qualitative analysis were used in the interpretation of the survey results in a comparative analysis. When the results from the individual analyses of qualitative and quantitative data did not completely agree, the interview data were re-read by the authors to identify other units of meaning; and to interpret the additional findings. As this process continued, a framework of small-scale theory construction was developed. The small-scale theory was generated in a process whereby the analyses laid stress on comparing and identifying contrasts in the residents'

perception of well-being, social trust, and neighbourhood reputation between the 6 housing areas studied to explore how these issues may be relationally patterned in the context of a Swedish municipality.

Paper IV

QFD analysis

Basic QFD was used to identify the residents safety needs and give proposition to design planning and promotion of residential safety. The responses on the open-ended question “What features in your residential environment are vital for you to feel safe?” were used. The residents’ perspectives on safety support needs in different types of housing areas were appropriate to represent the residents’ voice (customer voice) in this case study. Their relative importance for Safe Community programmes was also evaluated. The analysis was undertaken in steps.

Step 1. Development of requirements from needs

A summative content analysis was performed (Hsieh & Shannon, 2005) on the 787 participants who responded to the open-ended question (total 1336 statements). This resulted in 12 unique categories, which were analysed further in a Voice of the Customer Table (Hallberg et al., 1999). The importance of the clients’ needs was identified by the relative importance of the residents’ statements using a numeral rank order among the safety need categories expressed. Based on the ranked safety need categories, measurable and concrete requirements were developed.

Step 2. Definition of operational requirements and intervention design

The research team analysed each safety requirement with regard to options for interventions using a design rationale approach. Alternative design options were identified together with the expected positive and negative consequences of each option if it was implemented in the study setting. Following the analysis, the design option with the most positive consequences was chosen.

Step 3. Comparison between QFD and existing intervention design

Identification of the design attributes was made by analysing the application for renewed certification as a WHO Safe Community, i.e. How is the safety

work carried out in practice in the municipality and specifically in the living environment?

The application for renewed certification as a WHO Safe Community (WHO, 2010b) from the case study municipality was used as the source to identify existing intervention design attributes. This document was analysed using content analysis. In the application, the municipality authorities expressed the intention to continue the work (started in 1983 and ongoing since then) on a safe and secure local environment, according to the 6 target indicators for a Safe Community (WHO, 2010d). The representatives of the Safe Community programme described the development of an organization with a cross-disciplinary leadership group and 5 safety councils as follows: children and youth, seniors, traffic, occupational, and sports in the period 1990–2003. Then the safety promotion work was reorganized with the aim of coordinating the safety promotion work by integrating all relevant policy fields on the basis of the general objectives determined by the municipal council.

A comparative analysis between the QFD-based intervention design and the intervention designed by existing conventional methods was then made. The design attributes included in both approaches, only in the QFD approach, and only in the existing approach were identified.

Step 4. Implications for intervention design

Based on the comparative analysis made in step 3, improvements to the Safe Community programme designs were suggested. Considering intervention design from QFD and the relative importance of the residents' safety requirements (residents' rank order found in the summative content analysis), their absence or presence were compared in the actual Safe Homes indicators. Viewed from that perspective, implications for Safe Homes interventions that would strengthen the residents' needs were identified and improvements to the Safe Homes indicators were suggested.

Characteristics of the 4 papers included in the thesis

Table 3. Study design, data and methods used in the papers

Characteristics	Paper I	Paper II	Paper III	Paper IV
Study design	Cross-sectional	Cross-sectional	Cross-sectional	Case study
Data source	Questionnaire	Questionnaire Police-reported crimes	Questionnaire Focus group interviews	Questionnaire Application for renewed certification as a WHO Safe Community
Methods	Chi square test Content analysis	Chi square test Factor analysis Multilevel logistic regression analysis	Multilevel logistic regression analysis Qualitative analyses of transcribed interview data	Content analysis Theoretical application of QFD technique

Ethical considerations

The study municipality is anonymous and the areas studied in this thesis have been given fictitious names in respect of the residents living in there. This was done in an attempt to avoid the research contributing to any stigmatization processes. The study was approved by the Regional Committee for Research Ethics at Linköping University.

MAIN RESULTS

Non response

The external drop-out analysis showed no statistically significant differences in gender among the responders compared with the study population in 5 of the 6 areas, but in area Alpha-house more females and fewer males responded than expected. The responders were older than the study population in 3 areas (Alpha-house, Beta-mix, Beta-flat). The group of middle educated (10–12 years of education) responders was underrepresented in 3 areas (Alpha-house, Alpha-flat, Beta-mix) but there was no statistically significant difference in the distribution of country of birth between the responders and the study population (Table 4). These characteristics of the survey respondents should be taken in account when interpreting the results.

Table 4. Demographic characteristics of the survey respondents and study population in the housing areas studied

	Setting Alpha		Setting Beta		Setting Gamma	
	Alpha-house n (%)	Alpha-flat n (%)	Beta-mix n (%)	Beta-flat n (%)	Gamma-house n (%)	Gamma-flat n (%)
Gender distribution						
Respondents						
Male	108 (40.1)	101 (42.1)	139 (44.4)	108 (46)	68 (43.0)	77 (44.0)
Female	141 (52.4)	125 (52.1)	163 (52.1)	111 (47.2)	85 (53.8)	82 (46.9)
Partial drop-outs: non-respondent gender	20 (7.4)	14 (5.8)	11 (3.5)	16 (6.8)	5 (3.2)	16 (9.1)
Total	269	240	313	235	158	175
Study population						
Male	514 (50.8)	646 (48.9)	632 (48.3)	569 (48.2)	280 (48.2)	507 (51.6)
Female	497 (49.2)	676 (51.1)	677 (51.7)	611 (51.8)	301 (51.8)	476 (48.4)
Total	1011	1322	1309	1180	581	983
p-value	0.035*	0.246	0.480	0.766	0.409	0.461
Age distribution						
Respondents						
20–34 years	21 (7.8)	56 (23.3)	51 (16.3)	59 (25.1)	25 (15.8)	35 (20)
35–64 years	170 (63.2)	132 (55)	173 (55.3)	98 (41.7)	87 (55.1)	95 (54.3)
65–79 years	74 (27.5)	50 (20.8)	84 (26.8)	74 (31.5)	45 (28.5)	40 (22.9)
Partial drop-outs: non-respondent age	4 (1.5)	2 (0.8)	5 (1.6)	4 (1.7)	1 (0.6)	5 (2.9)
Total	269	240	313	235	158	175
Study population						
20–34 years	131 (13)	406 (30.7)	321 (24.5)	362 (30.7)	97 (16.7)	280 (28.5)
35–64 years	654 (64.7)	695 (52.6)	712 (54.4)	529 (44.8)	328 (56.5)	515 (52.4)
65–79 years	226 (22.4)	221 (16.7)	276 (21.1)	289 (24.5)	156 (26.9)	188 (19.1)
Total	1011	1322	1309	1180	581	983
p-value	0.027*	0.051	0.004**	0.044*	0.897	0.08
Country of birth						
Respondents						
Born in Sweden	253 (94.1)	165 (68.8)	283 (90.4)	186 (79.1)	136 (86.1)	115 (65.7)
Born elsewhere	15 (5.6)	75 (31.3)	30 (9.6)	48 (20.4)	20 (12.7)	56 (32)
Partial drop-outs: non-respondent country of birth	1 (0.4)	0	0	1 (0.4)	2 (1.3)	4 (2.3)
Total	269	240	313	235	158	175
Study population						
Born in Sweden	939 (92.9)	870 (65.8)	1188 (90.8)	891 (75.5)	503 (86.6)	612 (62.3)
Born elsewhere	72 (7.1)	452 (34.2)	121 (9.2)	289 (24.5)	78 (13.4)	371 (37.7)
Total	1011	1322	1309	1180	581	983
p-value	0.378	0.375	0.852	0.192	0.843	0.212

	Setting Alpha		Setting Beta		Setting Gamma	
	Alpha-house n (%)	Alpha-flat n (%)	Beta-mix n (%)	Beta-flat n (%)	Gamma-house n (%)	Gamma-flat n (%)
Years in school						
Respondents						
1–9 years	82 (30.5)	98 (40.8)	88 (28.1)	94 (40)	55 (34.89)	71 (40.6)
10–12 years	78 (29)	74 (30.8)	106 (33.9)	76 (32.3)	62 (39.2)	63 (36)
≥12 years	71 (26.4)	26 (10.8)	82 (26.2)	31 (13.2)	26 (16.5)	19 (10.9)
Partial drop-outs; non-respondent years in school	38 (14.1)	42 (17.5)	37 (11.8)	34 (14.5)	15 (9.5)	22 (12.6)
Total	269	240	313	235	158	175
Study population						
1–9 years	266 (26.3)	564 (42.7)	365 (27.9)	505 (42.8)	171 (29.4)	438 (44.6)
10–12 years	481 (47.6)	632 (47.8)	663 (50.6)	533 (45.2)	312 (53.7)	447 (45.5)
≥12 years	264 (26.1)	126 (9.5)	281 (21.5)	142 (12)	98 (16.9)	98 (10)
Total	1011	1322	1309	1180	581	983
p-value	0.001**	0.017*	0.001**	0.116	0.064	0.493
No. of questionnaires delivered (n=2510)	413	518	514	443	231	391
Drop-out on account of deceased or moved (n=34)						
Respondent rate (n=1390, 56.1%)	269 (65.1)	240 (46.3)	313 (60.9)	235 (53)	158 (68.4)	175 (44.8)

* χ^2 test significant at $p < 0.05$. ** χ^2 test significant at $p < 0.01$.

Paper I

The 787 participants who responded to the open-ended question “What features in your residential environment are vital for you to feel safe?” nominated 1336 statements. The responses were analysed according to area profile: 3 areas with blocks of flats versus 3 small-scale areas. The 355 respondents living in areas with blocks of flats generated on average 1.6 safety features each (total 581); the 432 respondents in detached houses generated on average 1.7 safety features (total 755). Most commonly, the respondents nominated one or two features each, but some contributed up to 7 features. The main categories identified in the analyses were social, physical, and recreational support.

A stable social structure in the housing area was perceived to be the central factor in a safety-supportive residential environment. The category social

support had 6 sub-categories and was the largest, irrespective of housing area profile, comprising 643/1336 statements (48.1%). Whereas maintenance of good and reassuring relations was emphasized in detached housing areas, support for management of poor or even fear-provoking neighbour relations was requested from areas with blocks of flats. Data showed that residents in blocks of flats asked less for social support (40.5%) compared with residents in the detached houses (54.0%).

The second largest category was physical support with 450 statements (33.7%) and 4 sub-categories. Issues concerning the functionality of the built environment such as property protection, adequate outdoor lighting, design of the built environment, and services available in the area were features that residents stated influenced their safety. Regarding physical support, no differences were found with respect to area profile.

One hundred and nineteen statements (8.9%) were categorized under the category of recreational support, with 2 sub-categories. This category appeared to be related to safety particularly through the psychological characteristics of the environment. The human existential need for the special relationship with a home, with functions beyond a place of residence, was included in this category. Conditions relating to the home environment's capacity to support a feeling of being sheltered and to have an opportunity to recover in privacy supported safety. Regarding recreational support, no differences were found with respect to area profile.

There were few differences between residents living in areas with blocks of flats or areas with small-scale houses in conditions, features and qualities nominated by the respondents' own thoughts on features vital to feel safe in the housing environment.

Paper II

Area differences in crime rates between small-scale areas compared with areas with blocks of flats were found (Table 5), although these neighbourhoods were close geographically with a shared local centre. In settings Alpha and Gamma, the mean total crime rates in the areas with blocks of flats were 5 to 6 times those in the small-scale areas. In setting Beta only a comparatively small difference in crime rates was observed between Beta-flat and the mixed tenure

area, Beta-mix. Theft and robbery were the most frequently reported crimes in all areas. The rates of reported violence and other crimes against personal safety were 10 (setting Alpha) to 4 (setting Beta) times as high in the areas with blocks of flats than in the small-scale or mixed areas within those 2 settings.

Table 5. Police-reported crime in the housing areas studied¹

	Setting Alpha		Setting Beta		Setting Gamma	
	Alpha-house	Alpha-flat	Beta-mix	Beta-flat	Gamma-house	Gamma-flat
Mean number of police-reported crime/1000 inhabitants per year (%)						
(a) Crime against life and health (homicide, manslaughter, maltreatment)	0.7 (2.4)	10.6 (5.8)	2.3 (3.1)	10 (9.8)	0.9 (2.5)	7.8 (5.2)
(b) Crime against freedom and serenity (unlawful threat, molest)	2.6 (8.9)	23.5 (12.9)	3.3 (6.2)	12.4 (12.2)	4.2 (12.7)	21.1 (12.7)
(c) Theft and robbery	16.7 (58.5)	88.3 (48.5)	36.1 (48.7)	49.3 (48.2)	20.4 (60.8)	81.2 (48.7)
(d) Crime of damage	5.1 (17.9)	30.8 (16.9)	13.7 (18.5)	10.8 (10.6)	3.4 (10.1)	18.6 (11.2)
(e) Other crimes	3.5 (12.2)	28.8 (15.9)	17.5 (23.5)	19.6 (19.2)	4.7 (13.9)	36.9 (22.1)
Total	28.6 (100)	182 (100)	72.9 (100)	102.1 (100)	33.6 (100)	165.6 (100)

¹Data source: Local police office. Based on the years 2003–2005.

In the factor analysis, 3 composite dimensions (CD) of perceived residential safety were identified: structural indicators of social disorder (CD 1); contact with disorderly behaviour (CD 2); and existential insecurity (CD 3). Each composite dimension was associated with different sets of modifying items and conditions.

Area-level crime rates were associated with reporting by the residents of structural indicators of social disorder (CD 1) (graffiti, car theft, litter) (OR 1.010, CI 1.007–1.013). Residents who rated their area reputation as less good were more than twice as likely to report concerns about structural indicators of social disorder (OR 2.86, CI 2.13–3.84). For females, the odds ratio of reporting such concerns was lower (OR 0.78, CI 0.65–0.94). Residents born abroad reported concerns about structural indicators of social disorder to a lower extent (OR 0.68, CI 0.55–0.84) than residents born in Sweden. Living in a flat was associated with concerns in this dimension (OR 1.37, CI 1.01–1.84), but

having been a victim of crime, age, and household civil status were not associated.

The odds ratio for reporting contact with disorderly behaviour (CD 2) (disturbing neighbours, disturbed night rest, tobacco smoking, alcohol consumption) was more than 5 times higher for residents living in flats than for those living in detached houses (OR 5.58, CI 3.06–10.17). Personal experience of crime in the last 12 months increased the likelihood of being concerned about disorderly behaviour in the residential area to 1.61 (CI 1.03–2.51). Such concerns were also associated with living in a neighbourhood with estimated less favourable reputation (OR 2.91, CI, 2.12–4.00). The odds ratio for reporting contact with disorderly behaviour was significantly lower for the elderly (65–79 years) (OR 0.51, CI 0.38–0.70). There were no associations between area-level crime, gender, education, country of birth and contact with disorderly behaviour, but for single households the odds ratio was 1.57 times higher (CI 1.28–1.94) than for family households.

The odds ratio of reported existential insecurity (CD 3) (feeling insecure in the residential area during the day or in the evening or at night, and fear of crime) in the neighbourhood was associated with area-level crime (OR 1.003, CI 1.001–1.006) but not significantly associated with being a crime victim in the last 12 months (OR 1.42, CI 0.85–2.37). Residents who thought their area reputation was less good had more than twice the odds ratio (OR 2.67, CI 1.64–4.35) for experiencing existential insecurity in the neighbourhood. Existential insecurity in the neighbourhood was reported 4 times more often by female residents (OR 4.54, CI 3.21–6.43) compared with males, and being elderly (65–79 years) increased the odds ratio for perceived existential insecurity to 1.72 (CI 1.20–2.46) times that of younger residents. Education, country of birth, household civil status, and type of housing were not associated with existential insecurity in the neighbourhood.

Paper III

The proportion of residents reporting high residential well-being (“very happy”) in their residential area was highest in the 3 small-scale housing areas: Alpha-house (85.6%), Gamma-house (75.4%) and Beta-mix (73.7%) in contrast to the 3 areas with blocks of flats. The proportion of residents reporting high social trust in people in the housing area varied extensively

across the areas, being highest in Alpha-house (55.7%) and lowest in Alpha-flat (5.5%). The proportions of residents reporting very good area reputation varied widely across the areas (Table 6).

Table 6. Distribution of environmental well-being in area (“very happy”), trust in people in area (“very large extent”) and estimated area reputation (“very good”) in the 6 housing areas ($n=1100$)

	Setting Alpha		Setting Beta		Setting Gamma	
	Alpha-house, n (%) (n=210)	Alpha-flat, n (%) (n=182)	Beta-mix, n (%) (n=258)	Beta-flat, n (%) (n=181)	Gamma-house, n (%) (n=135)	Gamma-flat, n (%) (n=134)
How happy are you living in your residential area?						
Very happy	179 (85.6)	51 (28.0)	191 (73.7)	78 (42.9)	101 (75.4)	54 (40.3)
To what extent do you think you can trust people in your residential area?						
To a very large extent	117 (55.7)	10 (5.5)	100 (38.8)	13 (7.2)	66 (48.9)	22 (16.4)
What sort of reputation do you think your residential area has?						
Very good	119 (56.7)	16 (8.8)	169 (65.5)	19 (10.5)	68 (50.4)	23 (17.2)

According to the multilevel logistic regression analysis, the adjusted odds ratio of a high level of residential well-being was 7 times higher among residents rating the reputation of their own area as very good (OR=7.26; CI=4.92–10.69). A high level of residential well-being was also more common among female residents and in the older age group (65–79 years), and was less common among immigrants and for tenants compared with owners of single-family houses. Living in a rented flat was statistically significantly associated with low residential well-being.

The multilevel logistic regression analysis also showed that trusting other people in the housing area “to a very large extent” was 8 times more common among residents rating the reputation of their own area as very good (OR=8.03; CI=5.60–11.52). High trust in people in the area was also more common among the middle-aged (35–64 years), but less common among residents in other tenure forms compared with owners of single-family houses. In addition, living in a flat was strongly associated with low social trust.

The focus group provided qualitative data that were analysed to identify mechanisms of how neighbourhood reputations were established. The housing area reputation was found to be strongly associated with well-being

and social trust. A reputation effort theory emerged from the analysis of the empirical data. Whereas people living in small-scale houses gladly said that they stayed in an area with a favourable reputation, people staying in areas with blocks of flats reported that they lived in a discredited housing area even though their own experiences from staying in the area were positive. One explanation for this difference found in the qualitative data was that those residents living in areas with a favourable reputation had been able to form a stronger community voice than those living in areas with an already unfavourable reputation. Thus, an area reputation seemed to be created by a collective reputation effort, and the result of this effort seemed to be an important part of the development of social trust and a modifier of residential well-being. High reciprocity and shared norms appeared to enhance the process by making possible the establishment of a strong area attachment. The residents in not favourable reputation areas were aware of the contradiction between their own experiences and the prevailing reputation of the area in the local community. Referring to what the local newspapers reports, the residents expressed no means available to improve the reputation.

Additional evidence for the reputation effort theory in the data was found in the way social ranking of housing areas was described. The theory is confirmed by resident statements, which refers to an intangible but socially manifest gradient. This social gradient, seemingly known by most individuals in the community, ranked the areas as superior or inferior to each other. A social tension between neighbouring areas was recognized and the area reputation also seemed to be a determinant of position in the local social structure; residents were found to position themselves and others in a rank order. The results suggest that area reputation is an important and probably underestimated dimension in the development of residential well-being and social trust in housing.

Paper IV

Analysis of the residents' safety need categories resulted in a completed Voice of the Customer Table (Table 7). The categories of residents' needs were structured into 3 main conceptual classes: (a) social needs; (b) physical needs; (c) recreational needs (Table 8). The relative importance of each class was subdivided by the 2 types of housing areas: blocks of flats or small-scale. All residents prioritized the needs of social support (a) as most important. In step

1 (development of requirements from needs) the QFD analysis showed that the initiation and maintenance of social integrative processes in housing areas were the most highly prioritized intervention among the residents.

In step 2 (definition of operational requirements and intervention design) measurable requirements were elaborated based on the ranking of safety need classes (social, physical and recreational needs). The residents ranked the social requirements highest, but it is underlined that it is through the combination of the suggested intervention design that safety could be improved. To create sustainable and safe social conditions in an existing neighbourhood unit, it was in particular found necessary to improve the participatory process among the residents themselves.

In step 3 (comparison between QFD and existing intervention design) the existing intervention design presented in the application document for renewed designation as a Safe Community was addressed (WHO, 2010b), and prevention activities were directed towards unintentional and intentional injuries. The activities described covered the whole municipality, not just the case study settings.

As mentioned, the QFD analysis showed that the initiation and maintenance of social integrative processes in the neighbourhood were the most prioritized interventions among the residents, but the analysis did not highlight the safety needs of several vulnerable groups (e.g. the old elderly, infants, and persons with disabilities). The Safe Community programme designed by professionals did not address the social integrative processes, but did cover the vulnerable groups.

Based on the comparative analyses in step 4 (implications for intervention design), implications for safety promotion intervention design at 2 levels were identified. Regarding residential safety promotion, it was found that the QFD technique was a useful addition to the methodological toolbox. The technique was particularly suitable for providing such efforts with a quality orientation from the residents' lay perspective. It was observed that social integrative processes were the most highly prioritized. These soft aspects of residential safety need to be incorporated in intervention design methods. The corresponding intervention elements should consist of measures that can strengthen social trust and reciprocity in housing areas where these qualities are missing or poor. Our results also indicate that the current Safe Homes

concept in the Safe Community programme would benefit from being widened to Safe Housing; that is, including the dwelling, the home, the neighbourhood, and the community within the concept. These aspects are inter-connected and equally relevant for residential safety promotion (Bonnefoy, 2004). The results suggest that a complete residential safety programme should also cover ecological sustainability (e.g. maintenance of green spaces associated with residential areas). Such ecological qualities were found to be closely related to residents' perceptions of safety.

Table 7. Voice of the residents (customers) table

The Voice of the residents	Who	What	When	Where	Why	How	The resident safety need
"Good contact with the nearest neighbours"	Male resident, age 32, detached house	Trustful relation to neighbours	When meeting neighbours and in communication with neighbours	In the immediate housing environment	Need to have trust and safe relation	By contact with the neighbours	Residents need of social support and to be on neighbourly terms
"No cigarette ends or remains from drug use"	Male, age 31, blocks of flats	Signals of social disorganization producing worry	When walking in the immediate environment	In the outdoor housing environment	Give impression of low social control	Visible signs produce insecurity	Residents need of social support by high informal social control
"Not needing to be afraid of getting attacked"	Male, 22, blocks of flats	Freedom from threat	Ongoing	In the immediate housing environment	To feel safe and secure	Being without experiences of personal threat in the living environment	Residents need of protection from crime and criminals
"We have a Neighbourhood Watch programme and that make sense for safety"	Female, 29, detached house	By implementing visible signs (plates) in the build environment and to keep a watchful eye on the immediate environment	Ongoing	In the immediate housing environment and in public places	Strengthen the sense of community	By the activity within organized Neighbourhood Watch programme	Residents need of taking action against crimes
"That the police regularly walk the beat in the area"	Male, 23, blocks of flats	Feel protected by rules in the society	Ongoing	In the immediate environment	A well-organized and safe society	By presence of law and order	Residents need of external resources
"To live in a neighbourhood with good area reputation"	Female, 34, Blocks of flats	The relative social status of the neighbourhood	Have a good position when being compared in a local social ordering	In mass media reports and by expression made by others	The importance of social status	Reduce stigma problems and reduce the effect of stigmatization	Residents need of social status
"Good lighting outdoors, and having all the lamps working"	Female, 28, blocks of flats	Sufficient and functioning lighting	After dark	In common outdoor space as footpaths, parking areas, green space etc.	To see well	By supply with adequate lighting	Residents need of physical support by adequate lighting
"Secure door and window lock"	Female, 40, detached house	Sufficient and functioning lock	Ongoing	In home	To feel protected	By high functionality and in case code lock	Residents need of physical support by property protection
"Proximity to public transport"	Female, 20, blocks of flats	Possibility to go away easily	When you need transport	In the immediate environment	To go to work or school and to socialize	Appropriate supply of transport possibilities	Residents need of proximity to services and area maintenance
"Enjoyable surrounding with beautiful nature"	Female, 28, blocks of flats	Positive influences by an aesthetical natural environment	When staying outdoors or look through the windows	In the immediate environment	Benefit to well-being and safety from the natural environment	Being in and viewing a pleasant living environment	Residents need of physical support by planning of the built environment
"We have peace and quiet in the area"	Female, 48, detached house	Possibility to recover	Ongoing	In the housing area	Basic need of control	A peacefully and pleasant living environment with high predictability	Residents need of recreational support by recovery in housing
"I live on the second floor, out of people's view, it's safe"	Male, 78, blocks of flats	Possibility to sustain personal integrity	Ongoing	In home	Basic need of integrity, privacy and shelter	Possibility to self regulate contacts with others and freedom to do what you want when you want	Residents need of recreation support by housing as a refuge

Table 8. The residents' priority for the safety needs demanded ($n=787$, 1336 statements)

Class	Rank (priority order)	
	Blocks of flats	Small-scale area
Social needs (48.1%)		
1. To be on neighbourly terms	2	1
2. High informal social control	1	2
3. Protection from crime and criminals	4	5
4. To take action against crimes	Not represented	9
5. External resources	10	11
6. Image of the area	11	12
Physical needs (33.7%)		
1. Adequate lighting	6	3
2. Property protection	3	4
3. Proximity to services and area maintenance	5	8
4. Planning of the built environment	9	6
Recreational needs (8.9%)		
1. Recovery in housing	7	6
2. Housing as a refuge	8	10
Statements not applicable (9.3%)		

DISCUSSION

The general findings in papers I, II, III are discussed within the framework of how neighbourhoods fulfil “universal human needs required for a healthy life” according to Macintyre et al. (2002:125) and Cummins et al. (2005). Based on the findings in papers I, II and III, actions to achieve safe housing areas are discussed in relation to the findings in paper IV. Then methodological considerations are addressed and conclusions made. Finally, future research issues are suggested.

Neighbours and interaction among people in an area

The results from the research reported in this thesis endorse that perceived safety in housing is fundamentally relational (Freedman, 1992) and created by interactions between the residents and the immediate environment. Perceived residential safety was also found to be supported by a stable social environment (papers I, II and III). This is in line with Macintyre et al.’s (2002:131) framework suggesting that the attributes of the socio-cultural features of a neighbourhood should include “norms and values, the degree of community integration”.

Good neighbour relations were defined as being a resource for residents’ safety. The term neighbours was understood here by proximity: “the people who live next door, the people who live on the block” (Unger & Wandersman, 1985:141). To be on neighbourly terms with other residents and to develop caring social ties towards neighbours was found to be a central condition for support safety (paper I). In line with Stephens (2008) some residents expressed that they just wanted to be acquainted with their neighbours but not necessarily closely connected. This links up with Granovetter (1973) who distinguishes social networks in 2 basic forms: strong and weak social ties or networks. Strong ties are closely built up by supportive inter-family relationships and by friends. They tend to sustain over time. Weak ties are more open and built up by non-binding loose connections. They are still highly relevant and valuable in the area of residence (Henning & Lieberg, 1996) with the capacity to give access to information and provide opportunities to promote safety.

The residents in paper I referred to practical support, such as borrowing or lending tools, but also to just experiencing a friendly attitude when seeing each other outdoors. Unger & Wandersman (1985:141) expand neighbouring to “the attachment of individuals with the people living around them and the place in which they live”. Differences between the area types with regard to the quality of neighbour relations between residents were found (paper I). In areas with blocks of flats a less friendly attitude seemed to exist and there were more conflicts between neighbours causing unsafety and stress. In comparison, in the small-scale areas, the norms and values were shared to a greater degree and the residents reported trustworthy and safe neighbour relations. Civic participation in the small-scale areas was to some extent built on shared histories, with the example of a past local housing area project in which the residents had acted together. The collective social functioning involved, for example, the introduction of low speed limits in the area or helping each other to protect property (papers I and III).

In addition, the residents in small-scale areas reported generally higher residential well-being, perceived safety and social trust than residents in blocks of flats (papers II and III). It has been suggested that the psychological response to neighbourliness influences residents’ well-being positively. To facilitate positive contact and interaction between neighbours can therefore be one way to increase feelings of attachment and reach more stable neighbourhood relations (Farrell et al., 2004).

Safety-related concerns

Macintyre et al. (2002) included levels of crime and other threats to personal safety as themes in the “socio-cultural features of a neighbourhood” framework. These features are applicable to the outcome in paper II. The study design covered crime rates and composite dimensions of perceived unsafety in the residential environment, i.e. environmental, socio-demographic, and personal correlates of safety-related concerns at the local level in the municipality studied.

The dimension, structural indicators of social disorder (litter, graffiti, car theft), was associated with the area level of crime and living in a flat. Similar patterns of clear differentiation between residents in different types of housing for the dimension, contact with disorderly behaviour, were observed (paper

II). Residents living in flats reported more severe problems with disturbance from neighbours, alcohol consumption, and smoking, and their sleep was disturbed more frequently because of noise in the residential environment. Contact with this sort of disorderly behaviour could be interpreted as a lack of inhibitors of incivilities and crime, which produces unsafety. These results are consistent with other studies of perceived unsafety in the neighbourhood conducted in Sweden (BRÅ, 2008; Wikström, 1991, 1997). These studies found that residents who rented their dwelling in a multifamily building in low socio-economic status areas perceived being the most unsafe in their neighbourhood environment.

A matter that has to be addressed is the importance of the distinction between composition and context influences on the pattern of perceived safety. The question is whether the relative divergence found has its roots principally in the composition of the residents in an area and their socio-demographic characteristics or if the psychosocial and physical residential environment (the context) has a considerable effect on perceived safety and well-being? However, it was not the aim of this thesis to answer this question, but there is a need for some reflections.

First, a plausible interpretation is that the density of relatively disadvantaged residents in blocks of flats leads to a higher level of crime and it is implicitly understood that the collective social functioning of residents are causing disorder (litter) and crimes (graffiti and car theft). In terms of Macintyre et al. (2002), this interpretation reflects a residential output measure and the mechanism behind can be deficient social control among the residents (Wikstrom et al., 2010).

Second, the land use structure in the housing areas investigated with blocks of flats has a significantly higher concentration of non-residential spaces (local school, shops, car parking and bus transport terminus), compared with the small-scale areas. It is thought that delinquency and vandalism probably occur to a greater degree in non-residential space. Type of land use is an often ignored aspect of a neighbourhood outcome (Sampson et al., 2002) that has been found to be associated to the number of crimes (Greenberg & William, 1984). This land use interpretation goes beyond the characteristics of the residents. Hence, the housing area has also to be observed by visual inspection by surveyors in order to generate usable measurements of the residential outdoor environment (Burton et al., 2005; Ormandy, 2009).

Third, knowledge on reported crime rates in the study areas is provided by the police's crime records. However, it is known that violence against children and women that takes place in the residents' private sphere is often unreported (Dalal, 2008). Crime rates appear to be related to the degree of reporting among citizens and residents and, in that sense, are interrelated to the character of the community (Whitzman, 2008b).

In accordance with previous studies (Bennett et al., 2007; Hale, 1996; Roman & Chalfin, 2008; Schafer et al., 2006; Skogan & Maxfield, 1981) it was found that female gender was strongly associated with the composite dimension, existential insecurity (to feel unsafe during the day or in the evening or at night and fear of crime) irrespective of the area of residence. It is possible that this dimension reflects an individual vulnerability, in contrast to the other concepts that were derived from determinants in physical space and the built environment to a greater degree (Koskela & Pain, 2000). Female fear of crime could be related to the risk of victimization, but it has been reported (Nilsson & Estrada, 2007) that most violence does not occur in the housing environment and that the relatively small number of violent crimes largely occur in the victim's own home. This could be interpreted to mean that existential insecurity is a more complex issue than area of residence, type of housing and victimization, representing an underlying structure of fear across females and males. Males and females were found to base their experience of fear of crime on different factors (Schafer et al., 2006). The gender differences in fear of crime is a public concern and not a private issue (Listerborn, 2002).

To spend time outdoors in the evening and at night has been found to be correlated with an increased risk of being robbed or mugged (LaGrange et al., 1992). Theft and robbery were the most prevalent types of crime in all areas in our study. As could be expected, area-level crime was associated with the existential insecurity dimension of safety-related concerns. But, unexpectedly, having been a victim of crime and type of housing were not. In this context it is also interesting to observe that country of birth, level of education and living alone were not important for perceived existential insecurity. These findings support that existential insecurity is a complex issue.

Perceived area reputation

Macintyre et al. (2002) suggest in their framework that the reputation of an area is a feature that can affect residents' health and well-being. In the areas studied in this thesis, the perceived area reputation influenced perceived safety and residential well-being to a high degree. To live in an area with a favourable reputation was an intangible factor found to support or challenge feelings of safety and residential well-being (papers II and III). A strong association between area reputation and both residential well-being and social trust was found. According to Dasgupta (1988), a good reputation is an asset that allows others to trust us and to give the idea that we are generous and open. In contrast, poor reputation goes together with a distrustful attitude and a need to keep distance (Sztompka, 1999).

Despite the spatial closeness of the areas investigated and the fact that each setting shared service centres and public schools, it was notable how the residents were able to distinguish their own area within a local social order. Suttles (1972:51) noted that residential identities are embedded in a structure in which "each neighbourhood is known primarily as a counterpart to some of the others". More recent studies have confirmed that comparison of the relative differences is an important mechanism for determination of the social position of a specific neighbourhood (Bolt & Van Ham, 2009; Marmot, 2005).

Thus, our data separated the areas investigated with regard to a positive or negative cycle in the development of trust. One explanation for this development may be found in the design of the built environment, which could facilitate control over the space around the dwelling, the interface with private and public zones and promote trust in neighbourhoods (Coleman, 1990; Newman, 1972). The design of the small-scale areas encourages residents to make contact with neighbours on their own initiative. Differences in the built environment may thus explain part of the variation in trust as the areas built on a small scale regulate contact between residents more effectively than the other areas. Greater homogeneity and higher stability among the residents in the small-scale areas might also promote the establishment of trust. In our study, homeowners were found to trust the people in their area to a greater extent than other forms of tenure; this was consistent with the findings in the literature (Dietz & Haurin, 2003; Lofors & Sundquist, 2007; Ziersch & Arthurson, 2007).

In the quantitative analyses (paper III), it was found that the resident's perception of area reputation was strongly associated with residential well-being. On the other hand, in the qualitative analyses it was found that the residents still expressed their happiness about living in their dwelling, irrespective of area. However, because the location of a person's home is an indication of social position, a rationale for the high level of residential well-being could be that people who do not have the ability to move avoid expressing their dissatisfaction about their residence (Lu, 1998). The found dissonance (paper III) is consistent with previous research, the mechanism for how reputation affects residential well-being, and indirectly health, is that a resident's self-esteem is affected by how the neighbourhood is found to be perceived by others (McLaren et al., 2005; Sooman & Macintyre, 1995). Several among our respondents in the focus groups found themselves being viewed from a negative perspective by others when they mentioned where they lived.

In the qualitative analyses (paper III), it was observed that residents living in areas with a high reputation took the opportunity to describe their neighbourhood in a favourable light, seemingly based on a more robust reciprocity than those living in areas with a lower reputation. The development of the low trust pattern in a housing area can be a secondary effect from a continuous social positioning process among the residents in local communities. This corresponds with other studies that have reported that more advantaged residents openly give prominence to the benefit of their own place of residence, implicitly as a sign of their rank in the social order (Davidson et al., 2008; Popay et al., 2003). Such reputation efforts disseminate stories that give an area a true or untrue, but meaningful, reputation.

Reputation might be related to psychosocial processes in the residents' immediate environment generating the assessment that one's neighbourhood is a bad or good place (Ellen & Turner, 1997; Haney, 2007). On the other hand, the identity of a housing area is influenced not only by the residents living in the area but by the actions, behaviour and attitudes of external persons and agents such as local police, schoolteachers, and the local newspapers (Suttles, 1972). The way the local newspaper reported on a housing area was one source that influenced area reputation with negative implications for residential well-being (paper III). Thus, there is a community-based contagious process affecting residents' perceived safety in specific areas through the influence of reports in the media and/or others around them. This observation indicates that it is important to study housing areas in a wider

context in their community and not only focus on what are held to be housing areas with problems (Urban, 2002).

However, changing the image of a housing area seems to be a challenging because a less favourable reputation holds hard (Hastings & Dean, 2003). Elias (1965) found in his classic study *The Established and the Outsiders* in the 1960s that the image of one of the 3 areas he studied remained as a criminal area although the level of crime decreased to the same level as the other two. Elias (1965) interpreted the findings as being caused by the established residents in two of the areas attributing themselves to be better than the outsiders. i.e. the residents in the third criminal area. Therefore, the established residents reinforced their own identity. The findings in the literature and the result in paper III suggest that internal area reputation is an output variable (residents' view of the area), and the external area reputation is an input variable (non-residents' view of the area) and that they are inter-dependent variables. The inter-relationship between these perspectives overlaps extensively, because the rated area reputation is affected by how residents think others imagine the area (Kearns et al., 2000). In this case, it is not easy to distinguish the composition measure from the context measure (Mitchell, 2001) and this dualism has been criticized as being false by Cummins et al. (2007:1835): "there is a mutually reinforcing and reciprocal relationship between people and place". The need to focus research on processes and interactions between the residents and the particular material and social resources available, the living environment in this case, are suggested (Cummins et al., 2007).

In this thesis (paper III) the area reputation also seemed to be a determinant of an individual's position in the local social structure of neighbourhoods. Current studies have found that shaming experiences contribute to people's own thoughts about their social position in certain hierarchical settings (Marmot, 2005). Perceived social status has also been found to be associated with self-rated health (Lundberg & Kristenson, 2008; Lundberg et al., 2009). The roots of this interpretation are to be found in social comparison theory (Suls & Wills, 1991) and relative poverty in rich countries as a capability handicap (Sen, 1992). Moreover, the stressful experience of perceived low social status is a psychosocial factor that has been argued to contribute to social inequalities in health (Bartley, 2004; Kristenson et al., 2004; Marmot, 2007; Singh-Manoux et al., 2005).

Physical quality of the residential environment

The typology of Macintyre et al. (2002) stipulates that the material resources of the physical environment are one type of feature with health capacity. The results from paper I indicate that, irrespective of area profile, perceived safety is supported by high functionality in the shared physical environment, for example, area maintenance, lighting, and proximity to services. There were only marginal differences in the conditions of the physical environment nominated by residents living in different types of areas. A common feature mentioned was adequate outdoor lighting. The outdoor resources, such as playgrounds, parks and schools, were equal in space and quality.

All these aspects are external environmental factors that the individual resident does not control. They constitute the shared resources of society. These kinds of material infrastructural resources are input measures according to the framework of Macintyre et al. (2002) reflecting local culture and/or historical development. The principal actors for improvements of input measures are policy makers and professionals. The question that arises is whether the residents in the study areas had equal physical quality in their outdoor residential environment. The buildings in the empirical setting studied were erected in roughly the same time period (mostly from the Million Programme), irrespective of whether they were detached houses or blocks of flats and all dwellings were of a good material standard. The principal urban planning for the study settings consists of neighbourhood units with 2 adjacent areas functionally connected and sharing a small local community centre, which gives equal availability. The residents are offered possibilities for recreation in quiet, large, beautiful surroundings within 5 to 10 minutes walk from each of the areas.

The socio-economic segregation between the neighbourhood units investigated goes beyond the features of local areas, and must be considered in the Swedish welfare context. The geographic and socio-economic segregation can be interpreted as a spatial manifestation of residential inequality. Despite policy intentions to decrease building segregation and ethnic and socio-economic segregation among residents, there has not been much success reported (Boverket, 2005). On the contrary, it seems as if residential segregation has developed even more with the production of new housing areas (FHI, 2005). More government focus on public health actions that stop and reverse the processes that generate inequities in safety and well-being in

the housing environment are required. The integration of health equity and health impact assessment into sustainable community planning has been suggested (Braubach et al., 2010).

Actions to achieve safe neighbourhoods

Based on the findings in papers I, II and III, the following question arises: what can be done to promote safety and to manage the problems in residential areas identified in this thesis? In paper IV, a setting-orientated approach was used to design an intervention programme based on the residents self-expressed safety needs and to use the results to inform the Safe Homes indicators.

Residents cannot perceive safety in unsafe environments, and today, there are extensive efforts being made by local authorities across the world to adopt programmes to enhance safety. Whether emphasizing the reduction of unintentional and intentional injuries and/or crime prevention, the aim is to strengthen safety in a community (Whitzman, 2008b). In paper IV it was found that the residents in the study areas had several different factors and conditions in mind when using the term safety, all of which are relevant from their lay perspective. It is striking that lay persons' knowledge about safety conditions in housing environments is often missing (Popay et al., 1998). To involve the residents' point of view is an important perspective that adds complementary knowledge relevant to a setting-orientated safety promotion work process (Maurice & Lavoie, 2004).

Recognizing that neither professional work on injury prevention nor professional work on crime prevention holds the complete answer to safety promotion in the housing environment, there is a need for input from lay knowledge in cooperation with the residents. However, it is not possible to give the one and only answer on how a safe and healthy neighbourhood should be created (Cummins et al., 2007; Urban, 2002). There is a need for the development of safety promotion intervention designs looking beyond the housing area into the wider community and municipality. There are different preferences depending on local circumstances, and therefore it is important to try to achieve neighbourhood safety by interaction with the residents using a setting-oriented approach to safety promotion (Maurice et al., 2008).

A setting-orientated work process requires a broad intersectoral collaboration between stakeholders to identify the determinants of the safety problems (environmental and behavioural) and take action on these (Maurice et al., 2001, 2008). In residential settings, QFD can support empowerment of residents by providing them with the means to achieve more control over decisions that influence their housing conditions and health (Laverack & Labonte, 2000). They can express their safety concerns, and methodologically influence the quality of the safety programme in the setting in which they hold particular expertise, that is, their neighbourhood (Laverack, 2007).

In addition to the implications for residential safety, the results from the QFD analysis provide some general propositions for safety promotion programmes. First, the results indicate that the practice of safety promotion should be expanded beyond objective safety and a narrow focus on injury rates to also address subjective safety as it is perceived in different strata of the community. Moreover, it was found that there is a risk that safety promotion programmes, contrary to the theoretic foundations, use top-down decision processes and rely predominantly on local government organizations and professional knowledge. Thereby, resources for safety promotion among lay persons and non-government organizations may be neglected in intervention planning. On the other hand, if the professional involvement is held back, the technical quality of risk analyses and intervention planning can become jeopardized. A challenge for communities implementing safety promotion programmes is to find the appropriate balance between lay and professional involvement in their safety efforts.

Could the results from this thesis be used to inform the indicators targeting Safe Homes within the Safe Community movement? In paper IV it was found that the residential perspective obtained by QFD complemented the existing views in the movement. The interventions in the case study programme were mainly decided based on safety inspections and epidemiologically defined injury problems; the QFD analysis identified interventions based on safety needs as experienced by the residents. However, the QFD analysis also brought to the fore a methodological dilemma, that is, whether local communities should use lay or expert perspectives in safety promotion. Our results suggest that a QFD analysis alone cannot identify the measures necessary to satisfy all safety needs in a housing area. For instance, the QFD analysis in the case study did not highlight the safety needs among several vulnerable groups, such as the old elderly, infants, and persons with

disabilities; the Safe Community programme designed by professionals covered these vulnerable groups. Thus, there is a need to combine methods based on residents' self-expressed needs with those based on hazard analyses performed by safety professionals. The QFD data were collected to reflect the personal experience of participating residents. Evidently, this perspective is insufficient if the experiences of minority groups with special needs are not included in the analyses. The bottom-up QFD approach is therefore suitable for integration with more conventional public health intervention planning methods. Professional expert knowledge and prioritization made by local democratically elected policy makers are thus still necessary for organizing safety promotion interventions.

In previous studies, resident participation was also shown to have the potential to enhance residential safety promotion processes by the contribution of specialist knowledge to the environmental design (Cozens, 2007). In the QFD study, an intervention design strategy that included surveillance of the perceived and documented hazards was conceived, acknowledging that residents' subjective insecurity is often derived from genuine risks (Reason, 2000; Zedner, 2003a). However, it was also acknowledged that residents limit their liberty of action in space and time based on perceived insecurity to a higher level than expected by experts who consider only the objective assessments of real risks (Whitley & Prince, 2005; Zani et al., 2001). These dissonances are a sufficient argument to use both objective (injury rates) and subjective (perceived safety) measures in the indicators for residential safety. Moreover, when designing indicators for an extended Safe Housing concept, a suggestion is to keep the indicator on the establishment of an infrastructure for cooperation between different community sectors and stakeholders as the central dimension. Understanding of how conditions in housing environments encompass mechanisms throughout social inequalities that are manifested with regard to the distribution of health and safety needs to be further elaborated (Braubach & Fairburn, 2010; Dunn, 2000; Dunn et al., 2006; Laflamme et al., 2009). Therefore monitoring the safety gap between relatively disadvantaged and advantaged residential areas should be included among the indicators for the extended Safe Housing concept.

Method discussion

There are several matters that have to be considered when interpreting the results. Because the papers included in this thesis involved residents from 6 neighbourhoods in one Swedish municipality, the results cannot be immediately generalized. However, the types of housing areas studied are not restricted to this municipality. The thesis brings to the fore the patterns and processes of perceived safety and residential well-being in common Swedish municipalities, in contrast to most previous studies that have been undertaken in the few big cities in Sweden.

For this study, a cross-sectional design was used, which restricted the possibility of drawing causal inferences. Given the cross-sectional study design, it is not possible to determine if a less favourable area reputation is a cause or a consequence of low residential well-being and low perceived safety (papers II and III). In addition, research on residential well-being and perceived safety and area reputation may be the result of cumulative processes over several years (Sundin, 2007). Data collection over several years with a base line and follow-ups would have allowed studies of the dynamic processes of the relationship between conditions in housing areas and their patterns over time (Macintyre et al., 2002).

The combined use of quantitative and qualitative data in this thesis provided the opportunity to use the strengths of both approaches, which strengthened the study design and highlighted the dynamic characteristics of the factors and conditions associated with residential well-being and perceived safety in the different housing areas studied.

The way to operationalize the safety concept is the subject of lively discussion (Litzén, 2006; Miller, 2008) because the questions may easily be formulated too generally with implied risk of low validity (Torstensson Levander, 2007). To avoid this, the questions in this thesis were clearly related to perceived safety in the housing environment. However, it has been reported that surveys measuring levels of safety and fear of crime in some accounts are influenced by seasonality (Semmens et al., 2002).

A number of variables that could contribute to residential well-being and perceived safety in the housing environment were not included in this study, for example, health indicators, individual and contextual social capital, and

objective neighbourhood characteristics (such as level of concentrated affluence), unemployment rate, outdoor conditions observed by surveyor: such as lighting in public areas, damage, graffiti, litter, etc. (Ellaway & Macintyre, 1998; Guite et al., 2006; Massey, 1996).

Efforts could be made to increase the number of items measuring area reputation in future questionnaires, such as: Would you recommend anyone to settle down here? Have you met with negative attitudes when mentioning your place of residence? (employers, school, banks, service providers, etc.) (Macintyre, 1997) and How do you think non-residents assess the reputation of your housing area? (Permentier et al., 2009).

In previous studies of housing areas based on postal questionnaires in Scotland (Ellaway et al., 2004) and Australia (Ziersch, 2005), the participation rates were around 50%, similar to the 56% (1390/2476) achieved in papers II and III in this thesis. In papers I and IV, only one open-ended question was analysed and the total non-response to that study question was 68% (1689/2476). However, the narratives provided by the 787 residents who answered the open-ended question were found to be rich enough to saturate the qualitative analysis process. The pattern of non-response was slightly skewed in the present study according to gender, age and education for some areas. Some findings may therefore have been overestimated, because the participants included a higher proportion of women (Alpha-house) and older persons (Alpha-house, Beta-mix, Beta-flat) compared with the total area population.

The 3 neighbourhood settings Alpha, Beta, and Gamma each included 2 spatially contiguous areas. This can potentially lead to a spillover effect between areas; for example, residents in a small-scale housing area who live close to an area with blocks of flats will have lower residential well-being, social trust and perceived safety because of the perception that they live near a less fortunate area. This risk is particularly high in setting Gamma, because the border between Gamma-house and Gamma-flat is not as distinct as between the areas in settings Alpha and Beta. However, we were not able to test the potential effect of spillover because we were not able to locate the respondents geographically within each neighbourhood.

The use of focus groups to examine the residents' experiences of their housing environment was useful for understanding the character of each area.

Valuable elements in discussions were uncovered and the focus groups provided additional depth about the attitudes and experiences that feed the social processes behind building a neighbourhood area reputation (paper III).

The recruitment process for the focus groups was not randomized, implying a possible risk of a selection effect. Residents who agreed to take part in the interviews potentially had more interest and time to share their views among neighbours. The focus group conversations might also have been different with a lower mean age of participants. On the other hand, we believe that the qualitative data from the 57 participants added essential information to the results in the thesis.

All interviews were located in the interviewees' own housing areas. The ambience during the focus group interviews was peaceful and the participants had a lively discussion, within the topic guide, irrespective of housing area. The influence of the presence of more female than male participants in most of the focus groups is not clear. It is possible that, in some cases, the male points of view were restricted in order to be in line with the rest of the group. A male and a female interviewer would possibly have reduced the potential risk of less expression of male input. However, the focus group moderator (the author) continually encouraged all participants to join in the conversation and to communicate divergent views, but in a few discussions some residents' voices dominated parts of the conversation.

Another limitation is that 6 housing areas is a relatively small number for use in multilevel analysis. However, multilevel analysis has been used in practice with a low number of groups (Ronan & Johnston, 2003). Furthermore, non-hierarchical statistical models that assume that individuals are independently sampled are unable to account for the intra-neighbourhood correlation that arises because individuals from the same neighbourhood will be more alike in unmeasured characteristics than people from different neighbourhoods. This violation of the independence assumption can lead to incorrect estimation of the standard errors in non-hierarchical models and might lead to incorrect inferences (Snijders & Bosker, 1999).

Choosing to let the study municipality and the empirical settings within the 6 housing areas studied be anonymous and to give them fictitious names was based on research that suggests that negative images of a housing area can be derogatory for the residents. Unpremeditated stigma has been underpinned

by academic studies of problem housing areas that, in concordance with local mass media reports, had contributed to bad area reputation (Sundin, 2007).

Summary

The findings in papers I, II and III generated factors and conditions that correspond to the neighbourhood features suggested in Macintyre et al.'s (2002) framework. In the housing structure studied, where residents stayed in housing of a good standard, and in a specific geographically contiguous configuration but with different types of housing areas, disparities in residential well-being and perceived safety were found. In line with Macintyre et al.'s (2002) framework, perceived reputation of an area was found to be an especially important feature for residential well-being and perceived safety in this thesis.

In the research reported in this thesis few differences were observed in the conditions and qualities nominated by the respondents' regarding features needed to feel safe in the housing environment between residents living in areas with blocks of flats or areas with small-scale houses.

The most important conditions supporting perceived residential safety were found to be a stable social structure with positive social ties and informal social control. A well-planned and well-maintained physical environment, with sufficient outdoor lighting and proximity to services, were also important factors supporting safety.

Differences in perceived safety-related concerns, residential well-being, social trust and crime rates between areas with blocks of flats compared with small-scale areas with detached houses were found, although these neighbourhoods were close geographically with a shared local centre.

Self-assessed area reputation seemed to be a determinant of position in the local social structure because residents were found to position themselves and others in a rank order. The results highlight self-assessed area reputation as an important mechanism of perceived residential safety, residential well-being and social trust.

Differences were found when comparing safety intervention designs based on residents' self-expressed needs with interventions designed by local government professionals using the QFD technique. It was found that the

initiation and maintenance of social integrative processes in housing areas were the most highly prioritized interventions among the residents, but their views did not highlight the safety needs of several vulnerable groups (e.g. the old elderly, infants, and persons with disabilities). The Safe Community programme designed by professionals did not address the social integrative processes, but did cover the vulnerable groups.

The results indicate that the current Safe Homes concept in the Safe Community programme would benefit from being widened to Safe Housing, including the dwelling, the home, the immediate environment or neighbourhood and the community within the concept. These aspects are inter-connected and equally relevant for residential safety promotion.

CONCLUSIONS AND FUTURE RESEARCH

Area reputation is an important and probably underestimated dimension in the development of residential well-being and perceived safety in the housing environment. Studies that increase the current knowledge on conditions that influence residents' perceived area reputation are needed. Research on internal area reputation and external area reputation and the relationship between them are desirable. Safety promotion interventions that nuance the image and reputation of housing areas could reduce safety inequalities.

The QFD technique can be added to the methodological toolbox for residential safety promotion. The technique is particular suitable for providing a quality orientation from the lay perspective on safety promotion in local residential areas.

Residents and professionals have different perspectives on safety promotion in local living areas. In developing safe housing, these different views should be identified and considered. Socio-economic differences and social inequalities in safety-related housing conditions between areas also need to be considered in the programmes.

The different strands in the multidisciplinary housing environment field of research need to be merged. The research community needs new extended ways of studying and practicing safety promotion in housing areas with regard to meaningful dimensions of residents' perceived safety experiences.

In response to the differences in residential well-being and perceived safety that were identified between residents in blocks of flats and residents in small-scale areas in this thesis, longitudinal studies of inadequacies in the housing infrastructure in current housing planning and policies are required. Public health research should not only address certain problem areas but should also address features in socio-economic advantaged and disadvantaged housing areas and the dynamics of their relationship in a wider context, corresponding to higher levels of society.

SVENSK SAMMANFATTNING

Bakgrund: Trygghet i boendemiljön är ett grundläggande mänskligt behov och kan vara en förutsättning för hälsa, men det finns få publicerade studier utifrån de boendes perspektiv. Trots att folkhälsoforskning i ett historiskt perspektiv har studerat samband mellan boendemiljö och hälsa finns det fortfarande ett behov av studier om hur förhållanden i boendemiljön påverkar boendetrivsel. **Syfte:** Det övergripande syftet med avhandlingen var att undersöka faktorer och villkor som är associerade till boendetrivsel och upplevd trygghet i olika typer av bostadsområden samt att jämföra en design av interventioner för trygghet som baseras på behov och krav som formulerats av de boende med den modell som utvecklats av tjänstemännen i kommunen. **Material och metoder:** En postenkät (svarsfrekvens 56%, n=2476) och elva fokusgrupper (57 deltagare) genomfördes bland de boende i tre bostadsområden med flerfamiljshus och tre områden med övervägande enfamiljshus, sk. småskalig bebyggelse, i en svensk kommun. Områdena är geografiskt lokaliserade så att varje område med flerfamiljshus gränsar mot ett område med småskalig bebyggelse. Kommunen är certifierad av WHO Collaborating Centre on Community Safety Promotion som en "Säker och trygg kommun". En öppen fråga i postenkäten användes för att identifiera faktorer och villkor som de boende uppfattade som viktiga för att känna sig trygga i sitt bostadsområde. En faktoranalys genomfördes med data från enkäten för att belysa lokala otrygghetsrelaterade problem. Därefter genomfördes en logistisk regression för att undersöka associationen mellan hög skattning för otrygghetsrelaterade problem och brottsligheten i bostadsområdet, ha varit utsatt för brott, områdets rykte, kön, ålder, utbildning, födelseland, civilstånd samt typ av boende. Associationen mellan bostadsområdets rykte, boendetrivsel och social tillit studerades med hjälp av en flernivåanalys. Data från fokusgruppintervjuer analyserades för att undersöka mekanismer för hur ett bostadsområdes rykte etableras. En metod för brukarcentrerad planering, Quality Function Deployment (QFD), användes för att integrera de boendes behov av trygghetsfrämjande insatser i utformningen av interventioner för trygghet i bostadsområden. QFD jämfördes sedan med den modell som tjänstemännen i kommunen arbetar efter. Jämförelsen användes för att identifiera förbättringar för de befintliga indikatorerna för "Trygga hem" inom WHO Collaborating Centre on Safe Community programmet. **Resultat:** Analysen av de boendes utsagor visade att

en stabil social struktur i bostadsområdet ansågs vara den viktigaste förutsättningen för en trygg boendemiljö. Behovet av att upprätthålla trygga relationer betonades i områdena med småskalig bebyggelse medan behov av stöd för att hantera otrygga och ibland även provocerande relationer till grannar uttrycktes av de boende i områden med flerfamiljshus. Brottsligheten var lägre och de upplevda trygghetsrelaterade problemen var mindre i områdena med småskalig bebyggelse. Tre sammansatta dimensioner (SD) av upplevd otrygghet i boendemiljön identifierades: strukturella indikationer på social oordning (SD 1), kontakt med störande beteende (SD 2) och existentiell otrygghet (SD 3). Både brottslighet på områdesnivå och individvariabler var associerade till SD 1 och SD 3, medan endast individvariabler var associerade med SD 2. De boende i områdena med småskalig bebyggelse rapporterade högst boendetrivsel och social tillit. Resultaten indikerar även att ett bostadsområdes rykte är starkt associerat till otrygghetsrelaterade problem, boendetrivsel och social tillit i boendemiljön. Områdets rykte syntes bestämma position i den sociala strukturen; de boende använde ryktet för att positionera sig själva och andra i en lokal rangordning. QFD-analysen visade att behovet av att initiera och underhålla socialt integrativa processer i bostadsområdet var högst prioriterat bland de boende, medan utsatta grupperns behov av en trygg boendemiljö inte lyftes fram. I programmet för en "Säker och trygg kommun" som kommunen arbetar enligt nämndes inte socialt integrativa processer, men programmet belyste utsatta grupperns behov. **Slutsatser:** Bostadsområdets rykte är en viktig och sannolikt underskattad dimension för att utveckla boendetrivsel och upplevd trygghet. QFD-metoden kan läggas till den metodologiska arsenalen för främjandet av trygghet i boendemiljön. Metoden är särskilt lämplig för en kvalitetsorientering utifrån ett boendeperspektiv på trygghetsfrämjande arbete i lokala bostadsområden. Det nuvarande begreppet för "Trygga hem" inom programmet för en "Säker och trygg kommun" skulle med fördel kunna utvidgas till "Trygg boendemiljö".

ACKNOWLEDGEMENTS

I need to say thank you to a number of people who have contributed to this thesis in various ways.

First, sincere gratitude goes to all of the residents who took part in the research.

I want to thank Kent Lindqvist, my supervisor, for his encouragement and belief in my research idea and my ability. Thank you for making the project possible and for your guidance throughout the research process.

Particular thanks go to my co-supervisor Toomas Timpka. I am grateful that you shared your comprehensive theoretical knowledge and research expertise with me during my doctoral training and for valuable scientific advice. I am especially thankful for your invaluable guidance in how to write a scientific paper.

Special thanks goes to my co-author and for a period my co-supervisor Cecilia Nordqvist with whom it has been a pleasure to work. Your positive view helped me to reach my goal. Thank you for your great generosity and all the back-up and fun!

Very many thanks for the valuable support of my co-author Nadine Karlsson who is a living dictionary in statistical methodology in practice! Your methodological interest is inspiring and you are a really good pedagogue.

I am obliged to my co-author Tommy Svensson for sharing your skilful scientific knowledge, your wisdom and inspiring discussions.

I also want to thank Birgitta Larsson, the head of the unit of community medicine. Thank you for all your support, enthusiasm and encouragement!

I would like to express my gratitude to Kenneth Söderman, director of the Building Foundation Platen, for the open and interesting discussions and for support while preparing this thesis. I also want to thank all the helpful staff and residential caretakers (in Swedish: *bovårdar*). Special thanks also to Ulf-

Henrik Östlund, Sören Wik, Gunnar Flodin, Lennart Karlsson and Anders Loinder for sharing your knowledge and your encouragement.

Very many thanks go to Pirjo Kovalainen, Marie Kristoffersson, Lena Henriksson and Jonas Nordén at the local municipality office for contributing valuable data information.

My thanks go to Tommy Johansson for excellent help with the local police-reported crime records.

Several people have contributed to the development of the thesis through discussions and valuable comments on text or practical help. I want to express my gratitude to Tomas Faresjö, Karin Melinder, Anne Göransson, Per Nilsen, Elisabeth Wilhelm, Annelie Johansson, Marie Gustavsson, Christina Baggens, Koustuv Dalal, Joakim Ekberg, Karin Festin and Marie Jansson.

Thanks to the helpful staff at the Centre for Public Health Sciences: Helle Norlind Brage, Madeleine Borgstedt-Risberg, Elin Mako, Marianne Angbratt, Marika Wenemark, Lars Walter, Anita Jernberger and Susanne Stålhammar.

Special thanks for the encouragement from my fantastic colleagues at the Master's programme at the Faculty of Health Sciences at Linköping University: Elaine Sjögren, Anne Göransson, Evalill Nilsson, Peter Garvin, Elisabeth Skargren, Margareta Lindgren, Cecilia Hedenstierna and at the Study Program in Postgraduate Specialist Nursing/Primary Health Care at the Faculty of Health Sciences at Linköping University: AnnaKarin Johansson, Christina Baggens, Louise Härdelin and Eva Törnvall.

All my past and present colleagues at the Division of Community Medicine and especially the unit of Social Medicine and Public Health Science deserve thanks for the positive interest in my research subject and for being such a social and supportive working environment for me. Special thanks to Kajsa Bendtsen for kind and professional guidance in all administrative research education matters!

Many thanks go to the nice and very professional librarians at the Health Sciences Library at Linköping University.

I would like to express my gratitude to my friends who have been a great support to me during my research education. Thank you all!

Warm and sincere thanks to my family for your sustainable support through thick and thin.

The last word can only be dedicated you, Kjell. Thank you for fruitful theoretical discussions and for your emotional support and patience sharing my ups and downs during this research education. Now, at last, the castle will not be my home any longer! Hence, I look forward to spending more time with you, my beloved Kjell!

The project was funded financially by the Swedish National Rescue Service Agency and The Building Foundation Platen.

Linköping, 2010

Agneta Kullberg

REFERENCES

- Akao, Y. (1997). *QFD - past, present, and future*. Paper presented at the Proceedings of the Third International QFD Symposium, Linköping.
- Andersson, R. (1999). Injury causation, injury prevention and safety promotion - definitions and related analytical frameworks. In: L. Laflamme, L. Svanström & L. Schelp (Eds.), *Safety Promotion Research. A Public Health Approach to Accident and Injury Prevention* (pp. 15–43). Stockholm: Karolinska Institutet, Department of Public Health Sciences, Division of Social Medicine.
- Andersson, R. (2000). Etnisk och socioekonomisk segregation i Sverige 1990–1998 [Ethnic and socio-economic segregation in Sweden 1990–1998]. In *SOU 2000:37 Välfärdens förutsättningar: Arbetsmarknad, demografi och segregation*. Stockholm: Fritzes Offentliga Publikationer (in Swedish).
- Andersson, R., & Bråmås, Å. (2004). Selective migration in Swedish distressed neighbourhoods: can area-based urban policies counteract segregation processes? *Housing Studies*, 19(4), 517–539.
- Arnstberg, K.-O. (2000). *Miljonprogrammet [The 'Million Programme']*. Stockholm: Carlsson (in Swedish).
- Bartley, M. (2004). *Health Inequality. An Introduction to Theories, Concepts and Methods*. Cambridge: Polity.
- Baum, F., & Palmer, C. (2002). 'Opportunity structures': urban landscape, social capital and health promotion in Australia. *Health Promotion International*, 17(4), 351–361.
- Baumer, T. L. (1985). Testing a general model of fear of crime: data from a national sample. *Journal of Research in Crime and Delinquency*, 22(3), 239–255.
- Bennett, G. G., McNeill, L. H., Wolin, K. Y., Duncan, D. T., Puleo, E., & Emmons, K. M. (2007). Safe to walk? Neighborhood safety and physical activity among public housing residents. *PLoS Medicine*, 4(10), 1599–1606 (e306. Doi:10.1371/journal.pmed.0040306).
- Birgersson, B. O., & Turner, B. (2006). *The future of main stream public housing in Europe - a Swedish perspective*. Paper presented at the ENHR conference in Ljubljana, Slovenia. Housing in an expanding Europe: theory, policy, participation and implementation.

- Bischooping, K., & Dykema, J. (1999). Towards a social psychological programme for improving focus group methods of developing questionnaires. *Journal of Official Statistics*, 15(4), 495–516.
- Blücher, G. (2001). Fysisk planering [Urban planning]. In: Boende och bostadspolitik i Norden [Housing and Housing Policy in the Nordic Countries] (pp. 219–239). Köpenhamn: Nordiska ministerrådet (in Swedish).
- Bolt, G., & Van Ham, M. (2009). Determinants of neighbourhood satisfaction and perceived neighbourhood reputation. *Nederlandse Geografische Studies*, 383, 67–88.
- Bonnefoy, X. (2004). *The policy relevance of housing and health - an international perspective*. Paper presented at the 2nd WHO International Housing & Health Symposium.
- Bonnefoy, X. (2007). Inadequate housing and health: an overview. *International Journal of Environment and Pollution*, 30(3–4), 411–429.
- Bonnefoy, X. R., Annesi-Maesano, I., Aznar, L., Braubach, M., Croxford, B., Davidson, M., et al. (2004). *Review of evidence on housing and health. Background document*. Paper presented at the Fourth Ministerial Conference on Environment and Health, Budapest, Hungary, 23–25 June, 2004.
- Bonnefoy, X., Braubach, M., Davidson, M., & Roebbel, N. (2007). A pan-European housing and health survey: description and evaluation of methods and approaches. *International Journal of Environment and Pollution*, 30(3–4), 363–383.
- Bonnefoy, X., Braubach, M., Röbbel, N., Moissonnier, B., & Ormandy, D. (2009). Background and introduction. In D. Ormandy (Ed.), *Housing and Health in Europe. The WHO LARES Project*. New York: Routledge.
- Boverket. (2004). *Folkhälsa i planering, byggande och boende-Boverkets roll i folkhälsoarbetet [Public health in planning, building and housing - the role of the National Board of Housing, Building and Planning in Public Health work] [electronic version]*. Retrieved November 2004 from <http://www.boverket.se> (in Swedish).
- Boverket. (2005). *Många mål - få medel. Boverkets utredning av statliga stöd till bostadsbyggandet 1993 - 2004 [Many goals - get funds. The National Board of Housing, Building and Planning investigation of state support for housing 1993 - 2004]*. Karlskrona: Boverket (in Swedish).

- Boverket. (2007). *Bostadspolitiken - Svensk politik för boende, planering och byggande under 130 år [Housing policy- Swedish policy for housing, planning and construction during 130 years] [electronic version]*. Retrieved 29 April 2008, from <http://www.boverket.se> (in Swedish).
- BRÅ. (2008). *Otrygghet och segregation. Bostadsområdets betydelse för allmänhetens otrygghet och oro för brott. Rapport 2008:16 Nationella trygghetsundersökningen*. Stockholm: Brottsförebyggande rådet (in Swedish).
- BRÅ. (2010). *Brottsförebyggande rådet [the Swedish National Council for Crime Prevention]*. Retrieved 16 August 2010, from <http://www.bra.se/> (in Swedish).
- Braubach, M. (2007). Residential conditions and their impact on residential environment satisfaction and health: results of the WHO large analysis and review of European housing and health status (LARES) study. *International Journal of Environment and Pollution*, 30(3–4), 384–403.
- Braubach, M., & Fairburn, J. (2010). Social inequities in environmental risks associated with housing and residential location--a review of evidence. *European Journal of Public Health*, 20(1), 36–42.
- Braubach, M., Martuzzi, M., Racioppi, F., & Krzyzanowski, M. (2010). On the way to Parma: understanding and addressing the influence that social inequities have on environmental health. *European Journal of Public Health*, 20(1), 12–13.
- Burton, E., Weich, S., Blanchard, M., & Prince, M. (2005). Measuring physical characteristics of housing: the Built Environment Site Survey Checklist (BESSC). *Environment and Planning B-Planning & Design*, 32(2), 265–280.
- Coleman, A. (1990). *Utopia on trial. Vision and Reality in Planned Housing*. (1st edition 1985). London: Hilary Shipman.
- Cooper, C. (1974). The house as a symbol of self. In: J. Lang. C. Burnette, W. Moleski, & D. Vachon (Eds.), *Designing for Human Behaviour*. (pp. 130–146). Stroudsburg, PA: Dowden, Hutchinson & Ross, 1974.
- Cozens, P. (2007). Public health and the potential benefits of crime prevention through environmental design. *NSW Public Health Bulletin*, 18(11–12), 232–237.
- Cross, L. T., & Kuller, R. (2004). Environmental atmosphere of outdoor residential areas in southern Sweden: a comparison of experts and residents. *Journal of Architectural and Planning Research*, 21(1), 74–90.
- CSDH. (2008). *Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health*. Geneva: World Health Organization.

- Cummins, S., Curtis, S., Diez-Roux, A. V., & Macintyre, S. (2007). Understanding and representing 'place' in health research: a relational approach. *Social Science & Medicine*, 65(9), 1825–1838.
- Cummins, S., Stafford, M., Macintyre, S., Marmot, M., & Ellaway, A. (2005). Neighbourhood environment and its association with self rated health: evidence from Scotland and England. *Journal of Epidemiology & Community Health*, 59(3), 207–213.
- D'Agostino, R. B., Balanger, A., & D'Agostino Jr., R. B. (1990). A suggestion for using powerful and informative tests of normality. *The American Statistician*, 44(4), 316–321.
- Dalal, K. (2008). *Causes and Consequences of Violence Against Child Labor and Women in Developing Countries*. Dissertation, Karolinska Institutet, Stockholm.
- Daniels, V. S., Sandler, I., & Wolchik, S. (2008). Use of quality management methods in the transition from efficacious prevention programs to effective prevention services. *American Journal of Community Psychology*, 41(3–4), 250–261.
- Dasgupta, P. (1988). Trust as a commodity. In: D. Gambetta (Ed.), *Trust* (pp. 49–72). New York: Basil Blackwell.
- Davidson, M. (2009). Perception of safety and fear of crime. In: D. Ormandy (Ed.), *Housing and Health in Europe*. New York: Routledge.
- Davidson, R., Mitchell, R., & Hunt, K. (2008). Location, location, location: the role of experience of disadvantage in lay perceptions of area inequalities in health. *Health & Place*, 14(2), 167–181.
- Delhey, J., & Newton, K. (2003). *Who Trusts? The Origins of Social Trust in Seven Societies*: Routledge.
- Dietz, R. D., & Haurin, D. R. (2003). The social and private micro-level consequences of homeownership. *Journal of Urban Economics*, 54(3), 401–450.
- Donner, C. (2000). *Housing Policies in the European Union. Theory and Practice*. Vienna.
- Dunn, J. R. (2000). Housing and health inequalities: review and prospects for research. *Housing Studies*, 15(3), 341–366.
- Dunn, J. R., Hayes, M. V., Hulchanski, J. D., Hwang, S. W., & Potvin, L. (2006). Housing as a socio-economic determinant of health - findings of a national needs, gaps and opportunities assessment. *Canadian Journal of Public Health-Revue Canadienne De Sante Publique*, 97, S11–S15.

- Egan, M., Tannahill, C., Petticrew, M., & Thomas, S. (2008). Psychosocial risk factors in home and community settings and their associations with population health and health inequalities: a systematic meta-review. *BMC Public Health*, 8, 239 (doi:10.1186/1471-2458-8-239).
- Eid, M., & Larsen, R. J. (2008). *The Science of Subjective Well-being*. New York: Guilford Press.
- Ekström von Essen, U. (2003). *Folkhemmet kommun. Socialdemokratiska idéer om lokalsamhället 1939–1952. Akademisk avhandling [The municipality in the Swedish welfare state- Social democratic ideas concerning local society 1939–1952]*. Dissertation, Atlas Akademi (in Swedish with English summary).
- Elias, N. (1965). *The Established and the Outsiders. A Sociological Enquiry into Community Problems* London: Sage Publications.
- Ellaway, A., & Macintyre, S. (1998). Does housing tenure predict health in the UK because it exposes people to different levels of housing related hazards in the home or its surroundings? *Health & Place*, 4(2), 141–150.
- Ellaway, A., McKay, L., Macintyre, S., Kearns, A., & Hiscock, R. (2004). Are social comparisons of homes and cars related to psychosocial health? *International Journal of Epidemiology*, 33(5), 1065–1071.
- Ellen, I. G., & Turner, M. A. (1997). Does neighborhood matter? Assessing recent evidence. *Housing Policy Debate*, 8(4), 833–866.
- Evans, G. W., Wells, N. M., & Moch, A. (2003). Housing and mental health: a review of the evidence and a methodological and conceptual critique. *Journal of Social Issues*, 59(3), 475–500.
- Farrell, S. J., Aubry, T., & Coulombe, D. (2004). Neighborhoods and neighbors: do they contribute to personal well-being? *Journal of Community Psychology*, 32(1), 9–25.
- Ferraro, K. F., & LaGrange, R. (1987). The measurement of fear of crime. *Sociological Inquiry*, 57, 70–101.
- FHI. (2005). *Statens folkhälsoinstitut, FHI: Kunskapsunderlag till Folkhälsopolitisk rapport 2005. Målområde 2, Ekonomisk och social trygghet [Theoretical foundation to report on Public Health Policy 2005. Objective Domain 2, Economic and social prerequisites. The Swedish National Institute of Public Health] [electronic version]*. Retrieved November 2008, from <http://www.fhi.se> (in Swedish).
- Freedman, L. (Ed.) (1992) *Encyclopedia of Government and Politics* (Vols. 2). London and New York: Routledge.
- Fukuyama, F. (1995). *Trust. The Social Virtues and the Creation of Prosperity*. London: Penguin Books.

- Fuller-Thomson, E., Hulchanski, J. D., Hwang, S. (2000). The housing/health relationship: what do we know? *Reviews on Environmental Health*, 15(1-2), 109-133.
- Galster, G. (2001). On the nature of neighbourhood. *Urban Studies*, 38(12), 2111-2124.
- Giddens, A. (1991). *Modernity and Self-Identity. Self and Society in the Late Modern Age*. Polity Press.
- Granovetter, M. (1973). The strength of weak ties. *The American Journal of Sociology*, 78(6), 1360-1380.
- Green, G., Gilbertson, J. M., & Grimsley, M. F. (2002). Fear of crime and health in residential tower blocks. A case study in Liverpool, UK. *European Journal of Public Health*, 12(1), 10-15.
- Green, J., & Tones, K. (2004). *Health Promotion. Planning and Strategies*. London: Sage Publications.
- Greenberg, S. W., & William, R. M. (1984). Neighborhood design and crime. A test of two perspectives. *Journal of the American Planning Association*, 50(1), 48-61.
- Guite, H. F., Clark, C., & Ackrill, G. (2006). The impact of the physical and urban environment on mental well-being. *Public Health*, 120(12), 1117-1126.
- Hair, J. F. (2006). *Multivariate Data Analysis* Upper Saddle River, NJ: Pearson Prentice Hall.
- Hale, C. (1996). Fear of crime: a review of the literature. *International Review of Victimology*, 4, 79-154.
- Hallberg, N., & Timpka, T. (1997). Quality function deployment for developing a customized social medical service. *Scandinavian Journal of Social Welfare*, 6(4), 292-300.
- Hallberg, N., Timpka, T., & Eriksson, H. (1999). The medical software quality deployment method. *Methods of Information in Medicine*, 38(1), 66-73.
- Halpern, D. (1995). *Mental Health and the Built Environment. More Than Bricks and Mortar?* London: Taylor & Francis.
- Halpern, D. (2005). *Social Capital*. Cambridge: Polity Press.
- Haney, T. J. (2007). "Broken windows" and self-esteem: subjective understandings of neighborhood poverty and disorder. *Social Science Research*, 36(3), 968-994.
- Hastings, A., & Dean, J. (2003). Challenging images: tackling stigma through estate regeneration. *Policy and Politics*, 31(2), 171-184.

- Heath, L. (1984). Impact of newspaper crime reports on fear of crime: multimethodological investigation. *Journal of Personality and Social Psychology*, 47(2), 263–276.
- Heber, A. (2007). *Var rädd om dig! Rädsla för brott enligt forskning, intervjupersoner och dagspress. [Take care! Fear of crime in the research literature, interviews and the daily press]*. Stockholms universitet, Stockholm (in Swedish with English summary).
- Henning, C., & Lieberg, M. (1996). Strong ties or weak ties? Neighbourhood networks in a new perspective. *Scandinavian Housing & Planning Research*, 13, 3–26.
- Hill, J. (1996). At home in the world. *Journal of Analytical Psychology*, 41(4), 575–598.
- Hillemeier, M., Lynch, J., Harper, S., & Casper, M. (2003). Measurement issues in social determinants. Measuring contextual characteristics for community health. In: A special supplement to HSR: The Social Determinants of Health. *Health Services Research*, 38(Part II(6)), 1645–1669.
- Hiscock, R. E. (2001). *The relationship between housing tenure and health: does ontological security play a role?* Dissertation, Faculty of Social Sciences, University of Glasgow.
- Hiscock, R., Kearns, A., Macintyre, S., & Ellaway, A. (2001). Ontological security and psychosocial benefits from the home: qualitative evidence on issues of tenure. *Housing, Theory and Society*, 18, 50–66.
- Holmqvist, E. (2009). *Politik och planering för ett blandat boende och minskad boendesegregation - Ett mål utan medel? Akademisk avhandling [Policy and planning for social and housing mix and decreased housing segregation. - A goal without means?]*. Dissertation, Uppsala Universitet (in Swedish with English summary).
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288.
- Ineichen, B. (1993). *Homes and Health. How Housing and Health Interact*. London: E & FN Spon.
- Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Vintage Books.
- Kamphuis, C. B., Mackenbach, J. P., Giskes, K., Huisman, M., Brug, J., & van Lenthe, F. J. (2010). Why do poor people perceive poor neighbourhoods? The role of objective neighbourhood features and psychosocial factors. *Health Place*, 16(4), 744–754.

- Kawachi, I., Kennedy, B. P., Lochner, K., & Prothrow-Stith, D. (1997). Social capital, income inequality, and mortality. *American Journal of Public Health, 87*(9), 1491–1498.
- Kawachi, I., Kennedy, B. P., & Wilkinson, R. G. (1999). Crime: social disorganization and relative deprivation. *Social Science & Medicine, 48*(6), 719–731.
- Kearns, A., Hiscock, R., Ellaway, A., & Macintyre, S. (2000). 'Beyond four walls'. The psycho-social benefits of home: evidence from West Central Scotland. *Housing Studies, 15*(3), 387–410.
- Kearns, A., & Parkinson, M. (2001). The significance of neighbourhood. *Urban Studies, 38*(12), 2103–2110.
- Kitchen, T., & Schneider, R. (2002). Crime and the design of the built environment: Anglo-American comparisons of policy and practice. In: J. Hillier, & E. Rocksby (Eds.), *Habitus: A Sense of Place* (pp. 241–266). Asgate Publishing Company.
- Kölegård Stjärne, M. (2005). *A matter of context: social inequalities in incidence of myocardial infarction*. Academic dissertation, Stockholm University/Karolinska Institutet. Stockholm: Centre for Health Equity Studies (Chess).
- Koskela, H., & Pain, R. (2000). Revisiting fear and place: women's fear of attack and the built environment. *Geoforum, 31*(2), 269–280.
- Krieger, J., & Higgins, D. L. (2002). Housing and health: time again for public health action. *American Journal of Public Health, 92*(5), 758–768.
- Kristenson, M., Eriksen, H. R., Sluiter, J. K., Starke, D., & Ursin, H. (2004). Psychobiological mechanisms of socioeconomic differences in health. *Social Science & Medicine, 58*(8), 1511–1522.
- Laflamme, L., Burrows, S., & Hasselberg, M. (2009). *Socioeconomic differences in injury risks. A review of findings and a discussion of potential countermeasures*. World Health Organization; Karolinska Institutet [electronic version]. Retrieved February 2009 from <http://www.who.dk>
- LaGrange, R. L., Ferraro, K. F., & Supancic, M. (1992). Perceived risk and fear of crime - role of social and physical incivilities. *Journal of Research in Crime and Delinquency, 29*(3), 311–334.
- Laverack, G. (2007). *Health Promotion Practice. Building Empowered Communities*. New York: McGraw-Hill.
- Laverack, G., & Labonte, R. (2000). A planning framework for community empowerment goals within health promotion. *Health Policy and Planning, 15*(3), 255–262.

- Lawrence, R. J. (2002). Healthy residential environments. In R. B. Bechtel, & A. Churchman (Eds.), *Handbook of Environmental Psychology* (pp. 394–411). New York: John Wiley.
- Lawrence, R. J. (2010). Housing and health promotion: moving forward. *International Journal of Public Health*, 55(3), 145–146.
- Listerborn, C. (2002). *Trygg stad - diskurser om kvinnors rädsla i forskning, policyutveckling och lokal praktik*. [Safe city. Discourses on women's fear in research, policy development and local practices]. Doctoral thesis, Chalmers University of Technology, Göteborg (in Swedish with English summary).
- Litzén, S. (2006). *Oro för brott i urban miljö. Trygghetsundersökningar med anknytning till Stockholm* [Worry of crime in urban environment. Safety requirements connected to Stockholm]. Stockholms universitet (in Swedish).
- Lofors, J., & Sundquist, K. (2007). Low-linking social capital as a predictor of mental disorders: a cohort study of 4.5 million Swedes. *Social Science & Medicine*, 64(1), 21–34.
- Lu, M. (1998). Analyzing migration decisionmaking: relationships between residential satisfaction, mobility intentions, and moving behavior. *Environment and Planning A*, 30(8), 1473–1495.
- Lujanen, M. (2001). *Boende och bostadspolitik i Norden* [Housing and housing policy in the Nordic countries]. Köpenhamn: Nordiska Ministerrådet (in Swedish).
- Lundberg, J., & Kristenson, M. (2008). Is subjective status influenced by psychosocial factors? *Social Indicators Research*, 89(3), 375–390.
- Lundberg, J., Kristenson, M., & Starrin, B. (2009). Status incongruence revisited: associations with shame and mental wellbeing. *Sociology of Health & Illness*, 31(4), 478–493.
- Macintyre, S. (1997). What are spatial effects and how can we measure them? In: A. Dale (Ed.), *Exploiting National Survey and Census Data: The Role of Locality and Spatial Effects*. Census and Survey Research (CCSR), occasional paper 12.
- Macintyre, S., & Ellaway, A. (2000). Ecological approaches: rediscovering the role of the physical and social environment. In: L. F. Berkman, & I. Kawachi (Eds.), *Social Epidemiology* (pp. 332–348). New York: Oxford University Press.
- Macintyre, S., & Ellaway, A. (2003). Neighborhoods and health: an overview. In: I. Kawachi, & L. F. Berkman (Eds.), *Neighborhoods and Health* (pp.20–42). New York: Oxford University Press.

- Macintyre, S., Ellaway, A., & Cummins, S. (2002). Place effects on health: how can we conceptualise, operationalise and measure them? *Social Science & Medicine*, 55(1), 125–139.
- Macintyre, S., Maciver, S., & Sooman, A. (1993). Area, class and health - should we be focusing on places or people? *Journal of Social Policy*, 22, 213–234.
- Marmot, M. (2005). *The Status Syndrome. How Social Standing Affects Our Health and Longevity*. New York: Owl Books.
- Marmot, M. (2007). Achieving health equity: from root causes to fair outcomes. *Lancet*, 370(9593), 1153–1163.
- Maslow, A. H. (1999). *Toward a Psychology of Being*. 3rd ed. [First published 1962]. New York: John Wiley.
- Massey, D. S. (1996). The age of extremes: concentrated affluence and poverty in the twenty-first century. *Demography*, 33(4), 395–412.
- Maurice, P., Laforest, J., Bouchard, L. M., & Rainville, M. (2008). *Safety promotion and the setting-orientated approach: theoretical and practical considerations [electronic version]*. Retrieved 18 January 2010 from <http://www.crpspc.qc.ca>
- Maurice, P., & Lavoie, M. (2004). About safety and safety promotion concepts. *Injury Prevention*, 10(4), 255.
- Maurice, P., Lavoie, M., Laflamme, L., Svanström, L., Romer, C., & Andersson, R. (2001). Safety and safety promotion: definitions for operational developments. *Injury Control and Safety Promotion*, 8(4), 237–240.
- May, T. (2002). *Qualitative Research in Action*. London: Sage.
- McLaren, L., Perry, R., Carruthers, L., & Hawe, P. (2005). Introducing a means of quantifying community reputation: the print media as a data source. *Health Place*, 11(2), 187–194.
- Miller, J. (2008). Impact of situational factors on survey measured fear of crime. *International Journal of Social Research Methodology*, 11(4), 307–325.
- Mitchell, R. (2001). Multi-level modelling might not be the answer. *Environment & Planning A*, 33, 1357–1360.
- Möller, N. (2005). Analysing safety: epistemic uncertainty and the limits of objective safety. *Safety and Security Engineering*, 82, 63–72.
- Morgan, D. L. (1996). Focus groups. *Annual Review of Sociology*, 22, 129–152.
- Moser, G. (2002). Sustainability, people and places: an agenda for the future. In: G. Moser, E. Pol, Y. Bernard, M. Bonnes, J. A. Corraliza, V. Giuliani (Eds.), *People, Places and Sustainability*. Seattle, WA: Hogrefe & Huber.
- Moser, G., Ratiu, E., & Fleury-Bahi, G. (2002). Appropriation and interpersonal relationships - from dwelling to city through the neighborhood. *Environment and Behavior*, 34(1), 122–136.

- National Statistics. (2002). *People's perceptions of their neighbourhood and community involvement. Results from the social capital module of the General Household Survey 2000*. London.
- Newman, O. (1972). *Defensible Space: Crime Prevention Through Urban Design*. New York: Macmillan.
- Newton, K. (1997). Social capital and democracy. *American Behavioral Scientist*, 40(5), 575–586.
- Nilsen, P. (2006). *Opening the black box of community-based injury prevention programmes - towards improved understanding of factors that influence programme effectiveness*. Dissertation no. 948, Linköping University, Linköping.
- Nilsen, P. (2007). From "Acts of God" to safety promotion - a brief history of injury research. In: P. Nilsen (Ed.), *Strategies for Health. An Anthology* (pp. 16–27). Linköping: Linköping University.
- Nilsen, P., Hudson, D. S., Kullberg, A., Timpka, T., Ekman, R., & Lindqvist, K. (2004). Making sense of safety. *Injury Prevention*, 10(2), 71–73.
- Nilsson, A., & Estrada, F. (2007). Risky neighbourhood or individuals at risk? The significance of neighbourhood conditions for violent victimization in residential areas. *Journal of Scandinavian Studies in Criminology and Crime Prevention*, 8, 2–21.
- Nordqvist, C., Timpka, T., & Lindqvist, K. (2009). What promotes sustainability in Safe Community programmes? *BMC Health Services Research*, 9(4) (doi:1186/1472-6963-9-4).
- Nordström, L. (1938). *Lort-Sverige [Dirty Sweden]*. Stockholm: Kooperativa förbundets bokförlag (in Swedish).
- Nykvist, K., & Boström, G. (2004). *Statens Folkhälsoinstitut. Syfte och bakgrund till enkätfrågorna i den nationella folkhälsoenkäten 2004 [Swedish National Institute of Public Health. Aim and Background to Survey Questions in the National Public Health Survey 2004]* (in Swedish).
- Oakes, M. J. (2003). The (mis)estimation of neighborhood effects: causal inference for practicable social epidemiology. *Social Science & Medicine*, 58(2004), 1929–1952.
- Oh, J. H., & Kim, S. (2009). Aging, neighborhood attachment, and fear of crime: testing reciprocal effects. *Journal of Community Psychology*, 37(1), 21–40.
- Ormandy, D. (Ed.). (2009). *Housing and Health in Europe. The WHO LARES Project*. New York: Routledge.

- OSHC. (2010). *Occupational Safety & Health Council. Safe and Healthy Residential Care Home Accreditation Scheme. Residential care home kit*. Retrieved 12 August 2010, from <http://www.oshc.org.hk/eng/culture/rch.htm>
- Permentier, M., van Ham, M., & Bolt, G. (2009). Neighbourhood reputation and the intention to leave the neighbourhood. *Environment and Planning A*, 41(9), 2162–2180.
- Popay, J., Thomas, C., Williams, G., Bennett, S., Gatrell, A., & Bostock, L. (2003). A proper place to live: health inequalities, agency and the normative dimensions of space. *Social Science & Medicine*, 57(1), 55–69.
- Popay, J., Williams, G., Thomas, C., & Gatrell, T. (1998). Theorising inequalities in health: the place of lay knowledge. *Sociology of Health & Illness*, 20(5), 619–644.
- Putnam, R. D. (1993). *Making democracy work. Civic traditions in modern Italy*. Princeton, NJ: Princeton University Press.
- Rådberg, J. (1997). *Drömmen om atlantångaren. Utopier & myter i 1900-talets stadsbyggande [The Dream of the Atlantic Steamer. Utopias & Myths of 1900s Urban Construction]*. Stockholm: Atlantis (in Swedish).
- Rahim, Y. (2005). Safe community in different settings. *International Journal of Injury Control and Safety Promotion*, 12(2), 105–112.
- Reason, J. (2000). Safety paradoxes and safety culture. *Injury Control & Safety Promotion*, 7(1), 3–14.
- Reppen, L., & Vidén, S. (2006). *Att underhålla bostadsdrömmen. Kvaliteter och möjligheter i flerbostadshus från 1961–1975. [To keep the dream on the dwelling]*. Stockholm: Forskningsrådet för miljö, areella näringar och samhällsbyggande, FORMAS (in Swedish).
- Roman, C. G., & Chalfin, A. (2008). Fear of walking outdoors. A multilevel ecologic analysis of crime and disorder. *American Journal of Preventative Medicine*, 34(4), 306–312.
- Ronan, K. R., & Johnston, D. M. (2003). Hazards education for youth: a quasi-experimental investigation. *Risk Analysis*, 23(5), 1009–1020.
- Rosen, G. (1993). *A History of Public Health*. [First published 1958]. New York: John Hopkins.
- Sampson, R. J. (2003). Neighborhood-level context and health: lessons from sociology. In I. Kawachi & L. F. Berkman (Eds.), *Neighborhood and Health* (pp. 132–146). New York: Oxford University Press.
- Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing "neighborhood effects": social processes and new directions in research. *Annual Review of Sociology*, 28, 443–478.

- Sandstedt, E. (2001). Från social välfärd till hållbar välfärd [From social welfare to sustainable welfare]. In: A. Lindbom (Ed.), *Den nya bostadspolitiken [The New Housing Policy]*. Umeå: Boréa bokförlag (in Swedish).
- SCB. (1997). *Statistiska Centralbyrån. Levnadsförhållanden. Rapport nr 91. Välfärd och ojämlikhet i 20-årsperspektiv 1975 - 1995. Sveriges officiella statistik [Statistics Sweden. Living conditions. Report 91. Living conditions and inequality in Sweden - a 20-year perspective 1975 - 1995. Official statistics of Sweden]*. Stockholm (in Swedish).
- SCB. (1999). *Statistiska Centralbyrån: Undersökningen om levnadsförhållanden, ULF [Statistics Sweden: Swedish Living Conditions Survey]*. Stockholm (in Swedish).
- SCB. (2004). *Statistiska centralbyrån: Så bor vi i Sverige: bostäder, boendemiljö och transporter 1975 - 2002 [Statistics Sweden. The way we live in Sweden: homes, the living environment and transportation 1975–2002]*. Örebro: SCB (in Swedish).
- SCB. (2009a). *Levnadsförhållanden rapport 117. Boende och boendemiljö 2006 - 07 [Statistics Sweden. Living conditions. Report no. 117: housing and living environment 2006-2007]*. Stockholm. Retrieved 15 November 2008 from <http://www.scb.se> (in Swedish).
- SCB. (2009b). *Statistiska centralbyrån: Bostads- och byggnadsstatistik årsbok 2009 [Statistics Sweden. Yearbook of Housing and Building Statistics 2009]*. Örebro: SCB 2009.02 (in Swedish).
- SCB. (2010). *Statistiska centralbyrån: NYKO-nyckelkodssystemet. Geografisk indelning för statistikredovisning för delområden inom en kommun [Statistics Sweden. Key-code system. Geographical classification for statistical account] [electronic version]*. Retrieved 13 August 2010 from http://www.scb.se/Pages/List____261381.aspx (in Swedish).
- Schafer, J. A., Huebner, B. M., & Bynum, T. S. (2006). Fear of crime and criminal victimization: gender-based contrasts. *Journal of Criminal Justice*, 34(3), 285–301.
- Searle, B. A., Smith, S. J., & Cook, N. (2009). From housing wealth to well-being? *Sociology of Health & Illness*, 31(1), 112–127.
- Semmens, N., Dillane, J., & Ditton, J. (2002). Preliminary findings on seasonality and the fear of crime. A research note. *British Journal of Criminology*, 42(4), 798–806.
- Sen, A. (1992). *Inequality reexamined*. Cambridge, MA: Harvard University Press.

- Shaw, C., & McKay, H. (1942). *Juvenile delinquency and urban areas*. Chicago, IL: University of Chicago Press.
- Shaw, M. (2004). Housing and public health. *Annual Review of Public Health, 25*, 397–418.
- Shaw, M., Dorling, D., & Mitchell, R. (2002). *Health, Place and Society*. Harlow: Pearson Education.
- Shenassa, E. D., Liebhaber, A., & Ezeamama, A. (2006). Perceived safety of area of residence and exercise: a pan-European study. *American Journal of Epidemiology, 163*(11), 1012–1017.
- Singh-Manoux, A., Marmot, M. G., & Adler, N. E. (2005). Does subjective social status predict health and change in health status better than objective status? *Psychosomatic Medicine, 67*(6), 855–861.
- Skogan, W. G., & Maxfield, M. G. (1981). *Coping with Crime. Individual and Neighbourhood Reactions*. Sage Publications.
- Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling*. Thousand Oaks, CA: Sage.
- Sooman, A., & Macintyre, S. (1995). Health and perceptions of the local environment in socially contrasting neighbourhood in Glasgow. *Health and Place, 1*(1), 15–26.
- Stephens, C. (2008). Social capital in its place: using social theory to understand social capital and inequalities in health. *Social Science & Medicine, 66*(5), 1174–1184.
- Suls, J., & Wills, A. (1991). *Social comparison: contemporary theory and research*. Hillsdale, NJ: Lawrence Erlbaum.
- Sundberg, S. (2001). *Boendetrivsel: verktyg och kunskap för utveckling av arkitektur med utgångspunkt i jämförelseteoretiska perspektiv och befolkningsstudier av alder [Environmental well-being: tools and knowledge for developing architecture based on theories of comparison and population studies of the elderly]*. Dissertation, Chalmers University of Technology, Göteborg (in Swedish with English summary).
- Sundin, M. (2007). *Bra läge men dåligt rykte. En jämförande studie av tre stadsdelar i Borås, Eskilstuna och Gävle [Good location but bad reputation. A comparative historical study of three city sections in Borås, Eskilstuna and Gävle]*. Dissertation, Uppsala University (in Swedish with English summary).
- Suttles, G. D. (1972). *The Social Construction of Communities*. Chicago and London: The University of Chicago Press.
- Svanström, L., & Haglund, B. J. A. (1987). *Att förebygga - samhällsmedicin i praktiken [To prevent - community medicine in practice]* (in Swedish).

- Sztompka, P. (1998). Trust, distrust and two paradoxes of democracy. *European Journal of Social Theory*, 1(1), 19–32.
- Sztompka, P. (1999). *Trust a sociological theory*. Cambridge: Cambridge University Press.
- Thomson, H., Petticrew, M., & Morrison, D. (2001). *Housing improvement and health gain: a summary and systematic review*. Glasgow: MRC Social and Public Health Sciences Unit. Occasional paper 5.
- Timpka, T., Nordqvist, C., & Lindqvist, K. (2009). Infrastructural requirements for local implementation of safety policies: the discordance between top-down and bottom-up systems of action. *BMC Health Services Research*, 9, 45.
- Torstensson Levander, M. (2007). *Trygghet, säkerhet, oro eller risk? Begreppsdefinitioner och mått [Safety, security, anxiety or risk? Concept definitions and measurement]*. Stockholm: Sveriges kommuner och Landsting. (in Swedish).
- Unger, D. G., & Wandersman, A. (1985). The importance of neighbors - the social, cognitive, and affective components of neighboring. *American Journal of Community Psychology*, 13(2), 139–169.
- United Nations. (1991). *The right to adequate housing*. UN Committee on Economic, Social and Cultural Rights. Retrieved 13 August 2010 from <http://www.unhcr.ch/tbs/doc.nsf/0/469f4d91a9378221c12563ed0053547e?Opendocument>
- United Nations. (2010). *UN-Habitat. Safer Cities programme*. Retrieved 12 August 2010 from <http://www.unhabitat.org/>
- Urban, S. (2002). *Grannskap, idé och planering. Forskningsrapport 2002:4 [Neighbourhood, idea and planning. Research report 2002:4]*. Institute for Housing and Urban Research, Uppsala University, Uppsala (in Swedish).
- van Kamp, I., van Loon, J., Droomers, M., & de Hollander, A. (2004). Residential environment and health: a review of methodological and conceptual issues. *Reviews on Environmental Health*, 19(3–4), 381–401.
- Welander, G., Svanström, L., & Ekman, R. (2000). *Safety Promotion: An Introduction*. Stockholm: Karolinska Institutet, Department of Public Health Sciences, Division of Social Medicine.
- Wendel-Vos, W., Droomers, M., Kremers, S., Brug, J., & van Lenthe, F. (2007). Potential environmental determinants of physical activity in adults: a systematic review. *Obesity Reviews*, 8(5), 425–440.

- Wendt, R. (1994). *Fattigsverige blir ett folkhem. I I Folkhälsans tjänst. Sju decenier med den svenska distriktssköterskan [Poor Sweden becomes 'the Swedish Folkhem'. In: In the service of Public Health. Seven decades with the Swedish district nurse]*. Stockholm: FOU rapport 43. Vårdförbundet SHSTF. Forskning och utveckling (in Swedish).
- Whitley, R., & Prince, M. (2005). Fear of crime, mobility and mental health in inner-city London, UK. *Social Science & Medicine*, 61(8), 1678–1688.
- Whitzman, C. (2008a). Community safety indicators: are we measuring what counts? *Urban Policy and Research*, 26(2), 197–211.
- Whitzman, C. (2008b). *The Handbook of Community Safety, Gender and Violence Prevention. Practical Planning Tools*. London: Earthscan.
- WHO. (1978). *Declaration of Alma-Ata*. Paper presented at the International Conference on Primary Health Care. Retrieved 12 August 2010 from http://www.who.int/publications/almaata_declaration_en.pdf
- WHO. (1986). *Charter adopted at an international conference on health promotion. The move towards a new public health*. Paper presented at the first International Conference on Health Promotion. Retrieved 12 August 2010 from <http://www.euro.who.int/en/who-we-are/policy-documents/ottawa-charter-for-health-promotion,-1986>
- WHO. (1991). *To Create Supportive Environments for Health. The Sundsvall Handbook*. Geneva: World Health Organization.
- WHO. (1998a). Health promotion glossary. Retrieved 12 August 2010 from http://whqlibdoc.who.int/hq/1998/WHO_HPR_HEP_98.1.pdf
- WHO. (1998b). *Safety and Safety Promotion: Conceptual and Operational Aspects*. Quebec: World Health Organization. Retrieved 12 August 2010 from http://www.phs.ki.se/csp/pdf/Books/promo_en.pdf
- WHO. (2003). *Healthy Urban Planning in Practice: Experience of European Cities. Report of the WHO City Action Group on Healthy Urban Planning*. Copenhagen: World Health Organization Regional Office for Europe.
- WHO. (2009). *Zagreb declaration for healthy cities. Health and health equity in all local policies*. Retrieved 12 August 2010 from <http://www.euro.who.int/en/what-we-do/health-topics/environmental-health/urban-health/publications/2009/zagreb-declaration-for-healthy-cities>
- WHO. (2010a). *WHO Collaborating Centre on Community Safety Promotion. Six indicators for different settings*. Retrieved 13 August 2010 from http://www.phs.ki.se/csp/who_introduction_en.htm

- WHO. (2010b). *WHO Collaborating Centre on Community Safety Promotion. Safe Communities network members*. Retrieved 10 May 2010 from <http://www.phs.ki.se/csp/safecom/motala3.htm>
- WHO. (2010c). *WHO Collaborating Centre on Community Safety Promotion. Safe Community network members*. Retrieved 11 August 2010 from http://www.phs.ki.se/csp/who_safe_communities_network_en.htm
- WHO. (2010d). *WHO Collaborating Centre on Community Safety Promotion. Six indicators for different settings*. Retrieved 12 August 2010 from <http://www.phs.ki.se/csp/>
- WHO. (2010e). *WHO Collaborating Centre on Community Safety Promotion. Indicators for Safe Homes*. Retrieved 3 May 2010 from http://www.phs.ki.se/csp/pdf/indicator09/indicators_safe_homes2009.pdf
- WHO Regional Office for Europe. (2000). *Integrated approaches to housing and health. Report on a WHO Expert Meeting*. Paris, EUR/00/5016610.
- WHO Regional Office for Europe. (2001). *Housing and health in Europe. Report on a WHO symposium*. Bonn, EUR/01/5027728.
- WHO Regional Office for Europe. (2004). *WHO technical meeting on "Housing-Health Indicators". Results of review and data availability screening in Member States. Summary report*.
- Wibeck, V. (2000). *Fokusgrupper. Om fokuserande gruppintervjuer som undersökningsmetod [Focus Groups. Focus on group interviews as method for inquiries]*. Lund: Studentlitteratur (in Swedish).
- Wikström, P.-O. H. (1991). *Sociala problem. Brott och trygghet. En intervjundersökning med vuxna i åtta förortsområden i Stokholm [Social Problems, Victimization and Fear of Crime]*. Stockholm: National Council for Crime Prevention (in Swedish with English summary).
- Wikström, P.-O. H. (1997). *1996 års Trygghetsmätning. Lokala problem. Brott och trygghet i Stokholms län. Delrapport I [1996 safety measurement. Local problems. Crime and safety in Stockholm county. Interim report I]*. Stockholm: Brottsförebyggande rådet, BRÅ. National Council for Crime Prevention (in Swedish).
- Wikström, P.-O. H. (2006). Individuals, settings and acts of crime: situational mechanisms and the explanation of crime. In: P.-O. H. Wikström, & R. J. Sampson (Eds.), *The Explanation of Crime: Context, Mechanisms and Development*. Cambridge: Cambridge University Press.
- Wikstrom, P.-O. H., Ceccato, V., Hardie, B., & Treiber, K. (2010). Activity fields and the dynamics of crime. *Journal of Quantitative Criminology*, 26(1), 55–87.

- Wilson, J. Q. & Kelling, G. L. (1982). Broken windows. *Atlantic Monthly*, 249(3), 29–38.
- Zani, B., Cicognani, E., & Albanesi, C. (2001). Adolescents' sense of community and feeling of unsafety in the urban environment. *Journal of Community & Applied Social Psychology*, 11(6), 475–489.
- Zedner, L. (2003a). The concept of security: an agenda for comparative analysis. *Legal Studies*, 23(1), 153–176.
- Zedner, L. (2003b). Too much security? *International Journal of the Sociology of Law*, 31(3), 155–184.
- Ziersch, A. M. (2005). Health implications of access to social capital: findings from an Australian study. *Social Science & Medicine*, 61(10), 2119–2131.
- Ziersch, A., & Arthurson, K. (2007). Social capital and housing tenure in an Adelaide neighbourhood. *Urban Policy and Research*, 25, 409–431.
- Öresjö, E. (1997). Neighbourhood Integration and Mobilization. In: C.G. Guinchard (Ed.), *Swedish Planning. Towards Sustainability Development* (pp. 42-46). Gävle: The Swedish Society for Town and Country Planning. PLAN: The Swedish Journal of Planning.

APPENDIX A: INTERVIEW GUIDE FOR FOCUS GROUP INTERVIEWS

Opening question

Tell us about your experience living here!

Introduction questions

How are the services in this housing area? (shops, health services, school, etc.)

Key questions

How do you perceive the physical environment?

House design? Sounds and light?

How are the playgrounds?

How is the view from your windows?

How is the park and the green space?

Do you trust the people living in the area?

Do you have help from your neighbours (watering flowers, help with pets, borrowing things, etc.)? What and where are the meeting places?

How is your residential well-being?

Are you safe in your home? Are you safe in your housing area?

What is important for your safety?

What promotes safety? Why?

How do you perceive the risk of being injured in your housing environment?

How do you assess the status of your housing area? Why?

Are there requirements to live here? What resources are needed?

Who may be involved in shaping the living environment?

Who has the power to influence?

What is the best/the worst thing about this neighbourhood?

Is there anything you would like to change? What? Why?

Finishing questions

Describe how and where you would most like to live!

Is there anyone who wants to add something?

APPENDIX B: QUESTIONS USED IN THE PAPERS

Question	Response items	Paper
What features in your residential environment are vital for you to feel safe?	<i>Open-ended;</i> <i>Write below:</i>	I, IV
Are you male or female?	Male Female	II, III
What year were you born?	<i>Write:</i>	II, III
What is your highest level of education?	Elementary school Secondary school or girls school 2-year High school or vocational school 3-4 year High School University 2.5 years or less University or college, three years or longer Other education, which one?	II, III
Country of birth?	Born in Sweden Born elsewhere	II, III
Do you share your dwelling with someone?	Yes, with spouse / partner Yes, with other adults Yes, with children aged: No	II
How many years have you lived in your housing area?	<i>Write:</i>	III
How many years have you lived in your current dwelling?	<i>Write:</i>	III
In what type of dwelling do you live?	Tenancy right Own house / terrace house Co-operative flat Care homes / group homes Temporary housing Other	III
How often is your sleep disturbed due to external disturbances such as street noise, noise from neighbors or similar?	Several times a week Someone once a week Once a month Some point in the quarter Rarely or never	II
Do you feel safe or unsafe in your residential area during the day?	Very safe Fairly safe Fairly unsafe Very unsafe	II
Do you feel safe or unsafe in your residential area during the evening and at night?	Very safe Fairly safe Fairly unsafe Very unsafe	II
Do you ever refrain from going out alone for fear of being attacked, robbed or molested in some other way?	Yes, often Yes, sometimes No	II
Have you been a victim of crime in your housing area (burglary, theft, discrimination) in the past 12 months?	Yes No	II

Question	Response items	Paper
What sort of reputation do you think your residential area has?	Very good Fairly good Fairly bad Very bad Don't know	II, III
How happy are you living in your residential area?	Very happy Fairly happy Fairly unhappy Very unhappy Cannot say	III
To what extent do you think you can trust people in your residential area?	To a very large extent To a fairly large extent To a fairly small extent To a very small extent Don't know/no opinion	III
To what extent does any of the following occur in your residential environment and how annoying do you find it?		
o Damage and/or graffiti	No Yes, but not annoying Yes, a bit annoying Yes, very annoying Cannot say	II
o Littering	No Yes, but not annoying Yes, a bit annoying Yes, very annoying Cannot say	II
o Car theft	No Yes, but not annoying Yes, a bit annoying Yes, very annoying Cannot say	II
o Disturbance from neighbours	No Yes, but not annoying Yes, a bit annoying Yes, very annoying Cannot say	II
o Tobacco smoking	No Yes, but not annoying Yes, a bit annoying Yes, very annoying Cannot say	II
o Consumption of alcohol use or use of other drugs	No Yes, but not annoying Yes, a bit annoying Yes, very annoying Cannot say	II