Burnout, work, stress of conscience and coping among female and male patrolling police officers

Susann Backteman-Erlanson
Dedicated to my:
Beloved father Per A. Backteman and sister Kristina Backteman
“Det är något bortom bergen, bortom blommorna och sången,
Det är något bakom stjärnor, bakom heta hjärtat mitt”
"Omkring Tiggarn från Luossa” Dan Andersson, Svarta ballader
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Abstract

Background Police personnel work in a wide variety of environments under different circumstances and part of the work involves stressful situations. Psychological strain from work increases the risk of burnout. This thesis focuses on patrolling police officers (PPO), who work most of their time in the community and have daily contact with the public. PPOs have to handle difficult situations such as encounters with victims of crime and accidents, as well as death. Thus, PPOs are exposed to high demand and low control, poor social support, and troubled conscience. We further assume that coping strategies might mediate consequences of stressful work situations which might lead to burnout. Since police work traditionally is a male coded occupation we also assume that there are differences between women and men in burnout as well as experiences from psychosocial work environment. The overall aim of this thesis is to explore burnout, psychosocial and physical work environment, coping strategies, and stress of conscience when taking gender into consideration among patrolling police officers.

Methods This thesis employs both qualitative and quantitative methods. The first study (Paper I) takes a qualitative approach with narrative interviews, recruiting a convenience sample of nine male PPO from a mid-sized police authority. The aim in Paper I was to describe experiences from traumatic situations when taking care of injured and deceased victims in traffic accidents. The interviews were analyzed using qualitative content analysis. Papers II, III, and IV were based on a cross-sectional survey from a randomly selected sample. It was stratified for gender from all 21 local police authorities in Sweden. In the final sample, 1554 PPOs were invited (778 women, 776 men), and the response rate was 55% (n=856) in total, 56% for women (n=437) and 53% for men (n=419). The survey included a self-administered questionnaire based on several instruments measuring burnout, stress of conscience, psychosocial and physical work environment, and coping. Instruments included were: Maslach’s Burnout Inventory
(MBI); the General Nordic Questionnaire for Psychological and Social Factors at Work (QPS Nordic), Karasek and Theorell’s Job Demand-Control-Support Model (JDCS), the Stress of Conscience Questionnaire (SCQ), and Borg’s Rating of Perceived Exertion (RPE). For assessing coping, the Ways of Coping Questionnaire (WOCQ) instrument was used. Questions concerning background characteristics were also included.

Results Findings in Paper I were based on narrative interviews and presented in three themes: “being secure with the support system,” “being confident about prior successful actions,” and “being burdened with uncertainty.” When being the “first responder,” most of the PPOs expressed that they used strategies based on their own knowledge, actions, and support systems within the organization. When knowledge, support systems, and actions were insufficient they felt insecure and “burdened with uncertainty.” In further studies, high levels of emotional exhaustion (EE), 30% for female PPOs and 26% for male PPOs, were found (Paper II). High levels of depersonalization (DP), was reported for 52% of female PPO, corresponding proportions for male were 60%. A multiple logistic regression showed that stress of conscience (SCQ-A), high demand, and organizational climate increased the risk of EE for female PPOs. For male PPOs stress of conscience (SCQ-A), low control and high demand increased the risk of EE. Independent of gender stress of conscience (SCQ-A) increased the risk of DP.

In Paper III, the psychometric properties of the WOCQ were investigated with exploratory factor analysis and confirmatory factor analysis. Differential item functioning (DIF) was used to test whether items were sensitive with respect to gender. A six factor solution was confirmed, which partially overlapped Folkman and Lazarus’ original eight factor solution. DIF analysis was detected for a third of the items in relation to gender. In order to further investigate the predictive impact of psychological demand, decision latitude, social support, coping strategies, and stress of conscience on EE as well as DP a block wise hierarchical multiple regression analysis was performed (Paper IV). Findings revealed that, regardless of gender, risk
of EE and DP increased with a troubled conscience amongst the PPOs. High demand also increased the risk of EE for female and male PPO.

**Conclusion** “Being burdened with uncertainty” in this male-dominated, context indicate that the PPOs did not feel confident talking about traumatic situations, which might influence their coping strategies when arriving to a similar situation. This finding can be related to findings from Paper II and IV showing that stress of conscience increased the risk of both EE and DP. The associations between troubled conscience and the risk of experiencing both emotional exhaustion and depersonalization indicate that stress of conscience has to be taken into consideration when studying the influence of the psychosocial work environment on burnout. Furthermore, and based on the findings of this thesis, the psychosocial work environment is not satisfying and needs to be improved for patrolling police officers in Sweden. We suggest that for further studies both qualitative and quantitative (longitudinal) methods should be used to improve knowledge in this area to increase conditions for preventive and rehabilitative actions.
## Abbreviations and explanations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AR</td>
<td>Accepting Responsibility</td>
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<tr>
<td>CCo</td>
<td>Confrontive Coping</td>
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<td>CFA</td>
<td>Confirmatory Factor Analysis</td>
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<td>CFI</td>
<td>Comparative Fit Index</td>
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<td>DI</td>
<td>Distancing</td>
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<td>DIF</td>
<td>Differential Item Functioning</td>
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<td>DP</td>
<td>Depersonalization</td>
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<td>EA</td>
<td>Escape Avoidance</td>
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<td>EE</td>
<td>Emotional Exhaustion</td>
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<td>EFA</td>
<td>Exploratory Factor Analysis</td>
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<td>GFI</td>
<td>Goodness Fit Index</td>
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<td>IFI</td>
<td>Incremental Fit Index</td>
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<tr>
<td>HR</td>
<td>Human Resource Coordinator</td>
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<td>JDCS</td>
<td>Job Demand-Control-Social Support Model</td>
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<td>MBI</td>
<td>Maslach Burnout Inventory</td>
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<tr>
<td>NSS</td>
<td>Nordic Safety and Security</td>
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<td>OR</td>
<td>Odds Ratio</td>
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<td>PA</td>
<td>Personal Accomplishment</td>
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<td>PDi</td>
<td>Psychological Distancing</td>
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<td>PRe</td>
<td>Positive Reappraisal</td>
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<td>PPOs</td>
<td>Patrolling Police Officers</td>
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<td>PPS</td>
<td>Planful Problem Solving</td>
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<td>QPS\textsubscript{Nordic}</td>
<td>General Nordic Questionnaire for Psychological and Social Factors at Work</td>
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<td>RMSEA</td>
<td>Root Mean Square Error of Approximation</td>
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<td>RPE</td>
<td>Borg's rating of perceived exertion</td>
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<td>SCo</td>
<td>Self Controlling</td>
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<td>SCQ</td>
<td>Stress of Conscience Questionnaire</td>
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<td>SCQ-A</td>
<td>Stress of Conscience Questionnaire A-part</td>
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<td>SPSS</td>
<td>Statistical Package for Social Science</td>
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<td>SSS</td>
<td>Seeking Social Support</td>
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<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>VIF</td>
<td>Variance Inflation Factor</td>
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<td>WOCQ</td>
<td>Ways of Coping Questionnaire</td>
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<td>WTh</td>
<td>Wishful Thinking</td>
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Enkel sammanfattning på svenska

Bakgrund Polisen har en komplex arbetssituation som omfattar preventiva, repressiva och hjälpende arbetsuppgifter som genomförs i olika miljöer och under olika förhållanden, vilket kan upplevas som stressigt och öka risken för utbrändhet. Denna avhandling fokuserar på patrullerande poliser i yttre tjänst (PPO). De arbetar större delen av sin tid ute i samhället och har därmed daglig kontakt med allmänheten och befolkningen. PPO möter offer för brott och olyckor, samt dödsfall, vilket innebär ökad psykosocial stress. Föreliggande studie stödjer sig på antagandet att ohälsa bland PPO påverkas bland annat av höga krav och låg kontroll i arbetet, dåligt socialt stöd och förekomst av ”samvetsstress”. Vidare antas att olika copingstrategier kan modifera risken att bli utbränd i en utsatt arbetsmiljö. Eftersom polisarbete traditionellt sett är manligt kodade antar vi också att det finns skillnader i upplevelsen av den psykosociala arbetsmiljön mellan kvinnor och män. Det övergripande syftet med avhandlingen är att studera förekomst av utbrändhet, samband mellan ohälsa och psykosocial arbetsmiljö, och samtidigt ta hänsyn till samvetsstress och copingstrategier bland svenska patrullerande poliser.

Metoder I avhandlingen användes både kvalitativa och kvantitativa metoder. Den första delstudien (I) hade en kvalitativ ansats med narrativa intervjuer där nio manliga PPO från en medelstor polismyndighet intervjuades. Syftet med delstudie I var att belysa upplevelser från att vara först på plats vid omhändertagandet av skadade och avlidna personer i samband med trafikolyckor. Intervjuerna analyserades med kvalitativ innehållsanalys. Delstudie II, III och IV var baserade på en tvärsnittsundersökning från ett slumpvist urval av svenska patrullerande PPO, stratifierat efter kön från alla 21 lokala polismyndigheter i Sverige. I det slutliga urvalet bjöds 1554 PPO att delta i studien (778 kvinnor, 776 män), svarsfrekvensen för hela gruppen var 55 % (n=856), 56 % för kvinnor (n=437) och 53 % för män (n=419). Undersökningen baserades på enkätdata innehållande väl beprövade och vanligt förekommande instrument inom
arbetsmiljöforskning. Enkäten innehöll frågor från; Maslach Burnout Inventory (MBI) med fokus på emotionell utmattning (EE) och cyniskhet (depersonalisation (DP)), frågeformulär om psykologiska och sociala faktorer i arbetslivet (QPSNordic), Karasek och Theorells Job Demand-Control-Support Modell (JDCS), Stress of Conscience Questionnaire (SCQ) och Borg’s Rating of Perceived Exertion (RPE). För bedömning av coping användes Ways of Coping Questionnaire (WOCQ). I enkäten ingick också frågor om bakgrundsvariabler.

Resultat Resultatet från delstudie I presenterades i tre teman: "att känna trygghet", "att erfara kunskap" och "att bära sina bördor". De flesta poliserna uttryckte att de efter en traumatisk händelse använde strategier baserade på sin egen kunskap samt åtgärder och stödsystem inom organisationen. När kunskap, stödsystem och åtgärder var otillräckliga kände poliserna sig ottrygga, de svåra situationerna blev en börda som återkom vid andra liknande situationer. Både kvinnliga och manliga PPO upptäckte höga nivåer av emotionell utmattning (EE) (delstudie II). En tredjedel av kvinnliga poliser rapporterade hög nivå av EE, motsvarande siffror för manliga poliser var ungefär en fjärdedel. Hög nivå av cyniskhet (depersonalisation, DP), rapporterades för lite mer än hälften av kvinnorna (52 %), motsvarande andelar för männen var 60 %. En multipel logistisk regression visade att samvetsstress (SCQ-A), höga krav och dåligt organisatoriskt klimat ökade risken för EE hos kvinnliga poliser, medan samvetsstress (SCQ-A), lite kontroll och höga krav ökade risken för EE hos manliga PPO. För både kvinnor och män ökade endast samvetsstress (SCQ-A) risken för DP. I delstudie III, undersöktes psykometriska egenskaper hos WOCQ – instrumentet med explorativ faktoranalys och konfirmatorisk faktoranalys vilket resulterade i en 6-faktor lösning, delvis överensstämmande med Folkman och Lazarus ursprungliga 8-faktor lösning. Differential Item Functioning (DIF) användes för att undersöka om frågor i WOCQ-instrumentet uppvisade sensitivitet med avseende på kön, vilket identifierades för en tredjedel av frågorna WOCQ-instrumentet. Hierarkisk multipel regressionsanalys användes för att ytterligare undersöka sambandet
mellan utfallet av EE respektive DP och krav, kontroll, social support, coping samt samvetsstress (delstudie IV). Resultaten visade att samvetsstress oavsett kön ökade risken för både EE och DP hos PPO. Även höga krav ökade risken för EE hos både kvinnliga och manliga poliser.

**Slutsats** ”Att bära sina bördor” i en mansdominerad kontext innebar att personen själv fick ta hand om sina händelser. Det var inte alltid tillåtet att prata om dessa händelser, vilket kunde påverka PPO:s förmåga att hantera liknande situationer. Dessa fynd kan relateras till studierna II och IV som visade att samvetsstress ökade risken för EE och DP. Fynden tyder på att samvetsstress bör beaktas när man studerar sambandet mellan psykosocial arbetsmiljö och utbrändhet, och det har inte beaktats i tidigare studier. Resultaten från denna avhandling visar också att den psykosociala arbetsmiljön inte är tillfredsställande och bör förbättras för svenska poliser i uttryckningstjänst. Om man i fortsättningen ska använda WOCQ bör man ha i åtanke att ungefär en tredjedel av frågorna är bättre anpassade för antingen kvinnor eller män. Slutligen ska det påpekas att i fortsatta studier bör såväl kvalitativa som kvantitativa (longitudinella) metoder användas för att förbättra kunskapen i området och därmed öka förutsättningarna för preventiva och rehabiliterande åtgärder.
Original papers

This thesis is based on the following papers, which will be referred to by their Roman numerals in the text.


Preface

In my work for many years, as a nurse in different emergency nursing settings, I have always been interested in how people that I met related to and coped with difficult situations. After several years of teaching at different levels at the Department of Nursing, I became involved in the police education, when it started at Umeå University. Meeting students in different emergency settings further inspired me. I was asked to join in a research project about traffic accidents and saw an opportunity, interviewing patrolling police officers about experiences from being the first responder coming to a traffic accident and taking care of the injured people. Based on this my forthcoming supervisor Christine Brulin invited me to work in a project focused on safety and security. Christine with her vast scientific knowledge encouraged me to dig deeper into this material. Together, we saw possibilities to go forward with studies investigating patrolling police officers mental health and work environment.
Introduction

Policing is a risky and stressful occupation (Anderson, Litzenberger, & Plecas, 2002; Berg, Hem, Lau, Håseth, & Ekeberg, 2005; Liberman et al., 2002). Acute stress is inherent in police work (Anshel, 2000). Experiences from police work can cause psychological strain and working as a police officer can increase the risk of experiencing psychological discomfort, such as symptoms of stress (Arrendondo et al., 2002). The work environment for police personnel includes both routine work stress with administrative, bureaucratic, and organizational aspects, and exposure to critical incidents when taking care of traumatized victims and their relatives (Liberman et al., 2002). Police personnel work in different contexts and circumstances; community police officers are mainly out in the community, having daily contact with the general public. This thesis focuses upon community police officers on patrol, who are organized under the public order unit and belonging to each of the 21 police authorities in Sweden (The National Police Board, 2012). Community police officers’ work has its base in patrolling in the community, and is therefore defined in this thesis as patrolling police officers (PPO). PPOs’ work is a collective work characterized by police officers working in the field in large or small groups (Stenmark, 2005). They have a complex work situation including preventive, repressive, and helping tasks (Åberg, 2001). Ekman (1999) describes the work environment for PPOs as characterized by the proximity to violence and the choice of how to handle violent situations. "Small talk" between PPOs is essential for managing the uncertainty of violence. Being attentive to colleagues and having the ability to recognize if someone does not feel good is also of importance (Ekman, 1999; Stenmark, 2005). Stenmark (2005) also pointed out that verbal, physical, and symbolic communication is the basis of the work. Andersson (2003) describes PPOs as policing in "real police work carried out at night by young men" (p. 90-91), implying that masculinity is the norm in police work. These young men could in the cover of darkness do as little as they wanted and chase certain persons without being interrupted. Fejes and Haake (2013) found similar results, formulated as “doing gender,” in police work. This was
found in statements from both women and men, showing a dualistic view where dispositions and states were connected to gender.

Police officers are exposed to especially demanding situations. Examples included are encounters with victims of crime, accidents, death and illness, which can affect health (Abdollahi, 2002; Richardsen, Burke, & Martinussen, 2006). Overall, police officers rated traffic accidents high as sources of traumatic memories many years after the incident (Karlsson & Christianson, 2003). International studies have presented Post Traumatic Stress Disorder (PTSD) with prevalence figures from 7 – 34% among police personnel (Asmundson & Stapleton, 2008; Marmar et al., 2006; Renck, Weisaeth, & Skarbø, 2002), compared with 7-12% in the general population (Seedat & Stein, 2001). There are a few studies reporting the prevalence of burnout in a policing context (Martinussen, Richardsen, & Burke, 2007). In measuring burnout with the Maslach Burnout Inventory from different countries among police officers variations from low scores to high scores have been presented (Hawkins, 2001; Storm & Rothmann, 2003; Taris, Stoffelsen, Bakker, Schaufeli, & van Dierendonck, 2005). After a discotheque fire in Gothenburg in 1998 where 63 young people perished, Renck (2002) investigated psychosocial distress among the police officers on duty in the rescue operation. Results shows that 7% of the participants still had high levels of psychological distress 18 months after the fire and most of the participants showed varying degrees of reduced social functioning. In the same study, female police officers involved in the rescue operation reported more intrusive thoughts than male officers did.

Several other health outcomes were more common among female police, such as experiencing more emotional demands, more gender discrimination, and more sexual harassment (Burke & Mikkelsen, 2005a; 2005b). In addition, sex differences in the prevalence of burnout and anxiety are only described (Burke & Mikkelsen, 2005a), and few studies have used gender theories in order to interpret the results of health experiences and the work environment among police personnel. As a conclusion, Renck (2002) points
to the importance of further investigation of police personnel’s experiences coping with difficult situations and the associations with factors in the psychosocial work environment. In this thesis, the focus is on burnout and the psychosocial work environment as well as coping strategies.
Background

Health

Health is commonly used as an outcome when studying the effect of high physical and psychological demand in the work environment. There are differences regarding theoretical definitions of health. Eriksson’s (1984) theory of health is defined as an integrated state of healthiness, freshness, and a feeling of well-being, but not necessarily the absence of illness or disability. Healthiness and freshness can be seen as the objective dimensions of health, while well-being can be seen as the subjective dimension. Healthiness refers to mental health, freshness to physical health, and well-being refers to the individual’s lived experience of feeling good. Health is characterized by the absence of disability, lived experience of well-being and the reversed state, presence of dysfunction and feelings of ill-being (Eriksson, 1984). In nursing, well-being, health, and quality of life can be seen as three basic concepts, closely related to each other on the same level. Furthermore, well-being can be seen as a unifying concept for health and quality of life (Sarvimäki, 2006). Counter posed to this, the medical view of health is the absence of disease, while the WHO’s (1986) definition is more complex. The WHO (1986) describes health as “a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical activities.” During the last decade, the WHO has highlighted the importance of “to promote societal change with a view to eliminating gender as a barrier to good health” (WHO, 2013). Another definition of health, the functional health perspective, focuses on the ability to participate in social roles and activities (Parson, 1979). Jensen and Allen (1993) describe dimensions of health closely related to disease, illness, and wellness, and as parts of the same process. Ostrowska (2012) focuses on the gendered social determinants of health, women’s life and work conditions are less favourable than men’s and that women evaluate their health—especially their mental health—as lower than men do.
As described above, health can be viewed from several perspectives, considering both physical and mental health and well-being, and can be measured by different outcomes. However when understanding health and consequences of ill-health, burnout is a regular focus. Thus, burnout is decided as the outcome in this thesis.

**Burnout**

Burnout is a syndrome related to work and stress, described as a prolonged response to chronic stress at work affecting employees across professions and industries in both profound and personal ways (Maslach, 2001). The concept of burnout was introduced in the mid-1970s by Freudenberger (1974) and Maslach (1976), both working independently of each other (Cox, Tisserand, & Tariz, 2005). They initiated a description of burnout conceptualized as a primary work-related syndrome of exhaustion, depersonalization, or cynicism, and reduced personal accomplishment with feelings of low self-esteem in one’s work-situation (Cox et al., 2005; Schaufeli & Taris, 2005). According to Schaufeli and Enzman (1998), the prevalence of burnout is higher among personnel working in occupations requiring close relations with other people. An instrument for measuring burnout, the Maslach Burnout Inventory (MBI), was developed with three dimensions: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). The MBI is now considered as a “gold standard” for measuring burnout (Maslach, Jackson, Leiter, Schaufeli, & Schwab, 1981; Schaufeli & Taris, 2005). Another definition of burnout is Pines and Aronson (1983), describing burnout as a state of physical, emotional, and mental exhaustion, and the instrument developed was Pines’ Burnout Measure (BM). Two other instruments are also available to measure burnout levels and prevalence: the Shirom Melamed Burnout Questionnaire (SMBQ) (Melamed et al., 1999) and the Copenhagen Burnout Inventory (CBI) (Kristensen, Borritz, Villadsen, & Christensen, 2005).
Prevalence figures for burnout vary across nations and occupations, but also when measuring is performed with different instruments. In the Netherlands, it ranges from 7 – 13% when measured with MBI (Schaufeli & Enzmann, 1998). In Sweden, investigations performed with MBI reported prevalence of 18% (Lindblom, Linton, Fedeli, & Bryngelsson, 2006). In Finland, the corresponding figure was 2.4% (Ahola et al., 2005). Swedish studies performed with SMBQ reported prevalence figures varying from 13 – 22% (Lindert, Müller-Nordhorn, & Soares, 2009; Norlund et al., 2010). In terms of occupations, high scores on the Maslach Burnout Inventory (MBI) were reported for physicians and midwives in the Netherlands, compared to low scores for police officers (Schaufeli & Taris, 2005). From a US police sample, 37% reported high scores on emotional exhaustion (EE) and more than half of the police officers reported high scores on depersonalization (DP), (Hawkins, 2001). Differences in prevalence regarding women and men have been reported in several studies. Norlund (2010) found that women had a significantly higher level of burnout measured with the Shirom Melamed Burnout Questionnaire (SMBQ). Women in age group 35 – 44 years old, 21.5% reported scores exceeding the cut-off point for burnout (Norlund et al., 2010). Lindert et al. (2009) reported similar figures from another Swedish sample regarding women with scores from 17 – 23%. However, men seem to score lower on EE and higher on DP (Schabracq, Winnubst, Cooper, & Wiley, 2003).

Few studies have reported mental illness among Swedish police personnel, but in studies from the Work Environment Statistical Report, police personnel reported high psychological strain (WEA, 2010). A study published in 2003 (SCB, 2003) on Swedish police personnel’s health reported 20% had “feelings of unease”, 40% reported fatigue, 20% reported “feeling shiftless and listless,” and 54% reported “feelings of being exhausted in the body.” Furthermore, one out of every four police officers had sleeping problems and one out of three felt that they were left alone in critical situations. In the report, it is also shown that 11% of police are absent on sick leave due to fatigue or stress from work. Since police personnel are exposed
to great mental stress, one can also assume that their mental health is affected, which has emerged in SCB’s publications (WEA, 2010; SCB, 2003). For this reason, we chose to use the instrument developed from Maslach’s theory of burnout for investigating emotional exhaustion as well as depersonalization and its relation to the work environment (Hallsten, Bellaagh, & Gustafsson, 2002).

**Psychosocial work environment**

The interaction of the psychosocial work environment with the social context and psychological processes in various occupational settings has an impact on the causation of illness (Stansfeld & Candy, 2006). It is well known that stress in the work environment affects health in general (Ahola et al., 2006; Lindblom et al., 2006; Stansfeld & Candy, 2006). More specifically, high demand at work in combination with a low chance for learning and having low control at work can increase the risk of burnout (Karasek & Theorell, 1990). In people–related occupations such as nursing and teaching, job demand and job control were associated with burnout (Jourdain & Chênevert, 2010; Santavirta et al., 2007). Soares et al. (2007) reported that high work demand were associated with high levels of burnout among women in Sweden. In addition, Elwér et al. (2013) found that different patterns of gender inequality in the workplace were associated with psychological distress for women but not for men. Psychological distress in Elwér's study (2013) was defined as having restlessness, concentration problems, worries and nervousness, anxiety, or other nervous distress.

In a longitudinal study of Dutch police officers, high levels of job demand was related to increased levels of exhaustion (Taris, Kompier, Geurts, Houtman, & van den Heuvel, 2010). In a Swedish study, 66% of police personnel rated that they could not at all decide over their duties (SCB, 2003). According to the demand-control model, police work can be referred to as an occupation including high demand and low control, increasing the
risk of fatigue, anxiety, depression, and/or physical illness (Karasek & Theorell, 1990).

Two of the most common theoretical models when studying the psychosocial work environment in relation to health are the Job Demand-Control Model (Karasek, 1979) and the Effort-Reward Imbalance model (ERI) (Siegrist, 1996). The Job Demand-Control Model was developed in the late 70s, identifying two crucial aspects of the work situation, demand and decision latitude (control) (Karasek, 1979). Johnson et al. (1989) pointed out that an important work-coping resource was neglected in the demand-control model and therefore social support was added to the original model in the 1980s (Johnson & Hall, 1988; Johnson et al., 1989). As a consequence the Job Demand-Control-Social Support (JDCS) model was developed. Social support decreases risks of psychosocial discomfort in a highly demanding occupational climate (Olofsson, Bengtsson, & Brink, 2003). Social support is a job-related resource and might be important for human-service workers (Dollard, Dormann, Boyd, Winefield, & Winefield, 2003). It seems that social support decrease the risk of burnout and emotional exhaustion in studies with police officers (Patterson, 2003; Thompson, Kirk, & Brown, 2005), thus social support could act as a mediating factor.

According to the JDCS model, demand and control are classified as follows. Demand refers to work load, sources of stress, time pressure, excessive work, and role conflict. Control, also called decision latitude, refers to decision authority and skill utilization, opportunities to learn new things, and to participate in decision making in workplaces and at work activities (Karasek & Theorell, 1990). Siegrist’s model (1996), called the “Effort-Reward Imbalance” (ERI) model, focuses on the framework of high effort and low reward conditions at work. This experience of imbalance from work environment with high effort spent and low reward received from work is assumed to be stressful (Siegrist, 1996). In a meta-analysis, it was evident that combinations of high demand and low decision latitude as well as, combinations of high efforts and low rewards were risk factors for common
mental disorders (Stansfeld & Candy, 2006). In two of the studies in this thesis, the instrument deriving from the JDCS model was used for assessing job strain (Karasek & Theorell, 1990).

In order to investigate work organization and other potential contributors to health and well-being, except for Karasek’s JDCS model in the psychosocial work environment, the QPS\textsubscript{Nordic} was found relevant regarding leadership, organizational climate, and culture. In a study from a British health context, supportive leadership had a reciprocal effect on well-being (Van Dierendonck, Haynes, Borrill, & Stride, 2004). The QPS\textsubscript{Nordic} was developed in the late 1990s from a request of the Nordic Council of Ministers (Lindström, 1995; 1997) and the topics of the questionnaire are relevant for health and well-being. The QPS\textsubscript{Nordic} has its base in various theories of organizational behaviour, work motivation, job satisfaction, job stress, well-being, and health (Wännström, Peterson, Åsberg, Nygren, & Gustavsson, 2009b).

**Stress of conscience**

In a recently published study about attitudes and problems within three local police authorities in Sweden, important reflections about ethical dilemmas became visible. Some of the PPOs expressed feelings of looking at themselves as “social workers working in the field” and being called out to “emergency situations.” Also difficulties with severe stressful situations and moments of “doing nothing” were expressed (Westin & Nilsson, 2009). However, as far as we have found, no study has reported troubled conscience related to health among PPOs when also taken the psychosocial work environment and coping strategies into consideration. In a nursing context, several researchers have found that conscience and feelings of a troubled conscience have an impact on burnout (Glasberg et al., 2006; Glasberg, Eriksson, & Norberg, 2007; Juthberg, Eriksson, Norberg, & Sundin, 2008). An instrument was developed in the research group aiming to understand the connection between a troubled conscience and burnout and also how social
support mediates this connection (Glasberg et al., 2006; Åhlin, Ericson-Lidman, Norberg, & Strandberg, 2012). Glasberg et al. (2006) found in her study on health care personnel that approximately 40% of the variance of having burnout was explained by stress of conscience. From the SCB report (SCB, 2003) almost 80% of police officers reported that psychosocial strain has increased within a five-years periods, and nearly half of the police officers report that they usually or never discuss difficult situations experienced in their work. Findings from SCB’s report (2003) could indicate a risk of social isolation in which workmates are not available for each other (Schaufeli & Enzmann, 1998). Since police work is complex contradictory ethical demands can emerge in the daily work for patrolling police officers and further contribute to troubled conscience and an increased risk for emotional exhaustion and depersonalization. The nature of conscience and its definition has occupied many philosophers from the time of Greek ancient thinkers from Socrates to modern times with Hanna Arendt’s thinking about “conscience appearing as an afterthought” (Arendt, 1971, p. 444). Virt (1987) writes about four functions of conscience: first, conscience as a moral sense, similar to responsibility and humanity; second, conscience as a form of moral judgment; third, conscience related to the inner voice speaking to oneself with warnings and judgments concerning guilt or innocence about oneself; and finally, conscience as a matter of will more than practical reasoning. Glasberg et al. (2007) writes that when our personal conscience comes into conflict with our norms and ideologies or practices in our society, conscientious conflicts can occur. These conflicts concern the dissonance between people and the society or within the person and can lead to a troubled conscience (Aldén, 2001; Virt, 1987).

For a more comprehensive understanding of the association between health and the work environment, we included instruments measuring stress of conscience in two of the studies in this thesis.
Coping

Research involving police personnel has shown that the risk of experiencing burnout can be mediated with different coping strategies in the work environment where psychosocial strain exists (Anshel, 2000). Hart et al. (1995) found that problem-focused coping resulted in positive work experiences, while emotion-focused coping resulted in negative work experiences. Moreover, the use of active and reappraisal coping was related to better psychological well-being (Diong et al., 2005).

The concept of coping in this thesis is based on Lazarus and Folkman’s cognitive theory of stress and coping, which is both relational- and process-oriented (Lazarus & Folkman, 1984). The relational aspect of stress is considered in terms of identifying stress as relationship between the person and the environment. The process-oriented aspect of stress is considered in terms of the person and the environment constantly changing, with the person and environment acting on each other. The way people cope with a certain situation is based on a cognitive appraisal, in which the individual evaluates the series of transactions between the person and the environment is stressful or not (Lazarus & Folkman, 1984). In stressful situations, people cope in various ways; they can cope in either problem-focused or emotion-focused ways to the same situation, though sometimes both coping strategies are used (Lazarus & Folkman, 1984). Problem-focused coping involves active strategies in which the individual tries to do something concrete about the stressful situation. Emotion-focused coping is passive, and the individual tries to restrain the emotions from the stressful situation and keep emotional balance. In addition, emotion-focused coping, such as avoidant and escapist strategies, are associated with poor mental health outcomes and also associated with regulation of emotion and especially distress. Problem-focused forms of coping such as seeking social support can be associated with negative outcomes, and with positive, depending on how the stressful encounter was appraised.
Contradictory results regarding gender differences about coping strategies have been reported (Gonzalez, Rodriguez, & Peiro, 2010; Haarr & Morash, 1999; He, Zhao, & Archbold, 2002; Kieffer & MacDonald, 2011; Piko, 2001). Matud (2004) reported women scoring significantly higher than men on emotional and avoidant coping, while also suffering from more stress. Different coping strategies, such as destructive coping and constructive coping, have been discussed in studies involving police personnel (He et al., 2002; Patterson, 2003). From a US police officer sample with mostly male participants, the use of active coping was associated with minor use of escapist coping. Additionally, police officers who reported more work stressors used escapist coping to a greater extent (Burke, 1998). Few studies have described coping strategies as a mediating factor when studying associations between burnout and work environment.

Folkman and Lazarus (1980) developed a 66-item questionnaire that has been used with various populations and in different contexts for over 25 years (Folkman & Lazarus, 1988; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Kieffer & MacDonald, 2011). In two studies of this thesis, we have used the Ways of Coping Questionnaire (WOCQ) to measure the coping strategies being used among Swedish police personnel.

**Gender**

Few studies have been performed with a gender perspective when investigating Swedish police organization. Åse (2000) analyzed the Swedish police at an organizational level, studying how the female-gendered body, with different symbols such as special uniforms in which the feminine body is exposed and the different meaning of patrolling policing for women and men. This was used when analyzing women as subordinated in the organization (Åse, 2000). She argued that female police officers were not seen as “real police officers” since they were looked upon as women first and second as police. Women’s entrance as police officers in the mid-1950s is viewed in Dahlgren’s (2007) historical thesis studying protocols from
different labour unions in the police structure. Her studies focused on how Swedish police profession was made masculine and feminine. Åberg (2001) and Andersson (2003) have both studied patrolling police officers’ work and also women’s entrance into the field, but focusing on an individual level. Andersson (2003) found that masculinity is integrated and supported through the practices within the organization. Åberg (2001) studied how police work is organized and separated between women and men. Women were relegated to areas where physical power was not required, which confirmed women in their typical “traditional dichotomous feminine identity” (Morash & Haarr, 2012). Fejes and Haake (2013) found gender constructed in a similar way when studying work division in police work. This was performed by comparing police work and work in elderly care. Caring dispositions in elderly care were constructed as totally female work, whereas caring in police work was more constructed as gender-neutral, and at the same time constructed with a macho or daring attitude as a male attribute (Fejes & Haake, 2013).

Gender is negotiated and constructed differently in specific work structures ruled by gender regimes. In these gender regimes, there are different patterns of relations between women and men, defined by positions and cultural meaning in that specific context (Connell, 2009). Gender is conceptualized for a person’s actions and interactions, either challenging or reproducing common perceptions of the essential view of being a woman or a man in a society (Connell, 2009; West & Zimmerman, 1987). Gender patterns and regimes are not stable; there is always a possibility of changing, we cannot predict in what way or which direction (Connell, 2009). Gender reflections can be applied to the understanding of exposures in psychosocial work environment when interpreting health experiences and outcomes. Gender reflections in this thesis refer to the socially constructed roles, behaviours, activities, and attributes in a given society or organization considered appropriate for women and men (WHO, 2013). Gender reflections, according to Connell’s gender theory (2009) and gender patterns are included in this thesis. Connell (2009) claims that gender patterns can
change and do change in our society, which has impact on public-sector worksites—in this case, the Swedish police profession.

**Rationale for the thesis**

Patrolling police officers’ work is complex and involves stressful situations. Their work is performed in variable environments with high demand, low control, and sometimes lacking social support. In addition, contradictory ethical demand such as a troubled conscience can emerge in the daily work for PPOs. Moreover PPOs also are involved in traumatic situation, often involving severely injured or deceased persons. It is known that, people working in close relations with other people are more likely to be exposed to psychosocial stress in the work environment. For this reason, it is important to investigate coping strategies in order to decrease the risk of ill health. Generally, traditionally male coded occupations might lead to a culture where the gendered work division can act as a barrier to good health.

This thesis is based on three assumptions. First, we assume that burnout, such as emotional exhaustion (EE) and depersonalization (DP), is common and differs between female and male PPOs. Second, we assume that EE and DP are associated with high demand, low control, stress of conscience, coping strategies, leadership, organizational climate, and social support. Third, we assume that coping with a traumatic situation might differ between women and men.
Aims of the thesis

Overall aims

The overall aim of this thesis was to explore burnout as well as the psychosocial work environment, coping strategies, and stress of conscience when taking gender into consideration among patrolling police officers.

Specific aims

• To describe male police officers’ experiences of working in traumatic situations when caring for victims of traffic accidents, and to reflect the results through the perspectives of gender theories (Paper I).

• To investigate the prevalence of burnout and its relation to the psychosocial work environment, physical strain, and stress of conscience among female and male police personnel in Sweden (Paper II).

• To explore the Ways of Coping Questionnaire (WOCQ) in relation to gender and psychometric properties for use among Swedish patrolling police officers (Paper III).

• To investigate associations between burnout (emotional exhaustion vs. depersonalization) and the psychosocial work environment, troubled conscience as well as coping strategies among patrolling police officers in Sweden (Paper IV).
Methods

This doctoral thesis is part of the Nordic Safety and Security project (NSS Dnr: 41 952) funded by the European Union Regional Development Fund. NSS was a larger collaborative project gathering more than 50 researchers from Umeå University (UMU), Luleå University of Technology (LTU), Västerbotten County Council (VLL), and the Swedish Research Defense Agency (FOI). The overall aim of the NSS was to develop collaboration in crisis management research and education connected to education programs for emergency nurses, police officers, and firefighters.

Research design

This thesis includes both qualitative and quantitative methods. In order to get ideas for the entire research process, our first study had a qualitative approach with narrative interviews. Folkman and Moskowitz (2004) recommend the narrative approach to understand stressful events and how the respondents encounter these experiences. For the subsequent studies, a quantitative approach was used based on questionnaires consisting of previously validated instruments measuring burnout as well as the psychosocial and physical work environment, coping strategies, and stress of conscience.

Setting

Swedish police are organized in 21 local police authorities with one County Police Commissioner who is appointed by the government as the head of each authority. Police personnel are organized in different departments at the local level. The foundation for police work in each department is done by community police officers on patrol who are the most visible in the public eye. Community police officers’ work is performed mostly by patrolling from cars or other vehicles but also by walking in the different cities, which is the definition in this thesis of patrolling police officers (PPOs). PPOs’ work is regarded as problem-oriented and the aim is to be responsive to citizens’
need for security, to create good relationships in the local community, and to maintain public order (The National Police Board, 2012; Karp & Stenmark, 2010). There are also other special competencies within the police force, for example, bomb technicians, dog handlers, forensic detectives, mounted police, marine policing units, and traffic police. Participants in this thesis were solely patrolling police officers.

**Participants**

With respect to the methods used in the studies, both convenient (qualitative Paper I) as well as stratified random selection (quantitative Papers II-IV) were used for inclusion of participants. Characteristics regarding participants, data collection, and analysis are presented in Table 1.

*Table 1. Overview of studies in the thesis*

<table>
<thead>
<tr>
<th>Paper</th>
<th>Participants</th>
<th>Data collection</th>
<th>Time for data collection</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Nine male patrolling police officers</td>
<td>Narrative interviews</td>
<td>2003 and 2008</td>
<td>Qualitative content analysis</td>
</tr>
<tr>
<td>II</td>
<td>Patrolling police officers: 437 female, 419 male</td>
<td>Karasek, MBI, SCQ, QPSNordic</td>
<td>2009-2010</td>
<td>t-test for independent sample, Pearson correlation Multiple logistic regression</td>
</tr>
<tr>
<td>III</td>
<td>Patrolling police officers: 437 female, 419 male</td>
<td>WOCQ</td>
<td>2009-2010</td>
<td>Reliability analysis, Parallel analysis, CFA, EFA, DIF</td>
</tr>
<tr>
<td>IV</td>
<td>Patrolling police officers: 437 female, 419 male</td>
<td>Karasek, MBI, SCQ, QPSNordic WOCQ</td>
<td>2009-2010</td>
<td>Pearson correlation Hierarchical linear regression</td>
</tr>
</tbody>
</table>
**Paper I.** In the qualitative study, a convenient sample of participants was recruited from a local mid-sized police authority in northern Sweden. Inclusion criteria were being responsible for patrolling and having experience taking care of people injured or deceased in traffic accidents. The participants were invited at a morning meeting with the police officers on duty, and the majority was men. They were informed about the project and the purpose of the study, and they later received an information letter. Participants interested in being interviewed were asked to contact the researcher (SBE) to make an appointment to perform the interview. The location for the interview was decided in agreement with the participant and was usually performed in a separate room at the police department, or otherwise at the Department of Nursing at Umeå University under similar circumstances. Nine male police officers agreed to participate in the study. The data collection was performed on two occasions: six interviews in 2003 and three 2008.

**Paper II-IV.** Participants for the quantitative studies were based on a stratified random sample from all 21 local police authorities in Sweden. A flowchart for the total data collection is illustrated in Figure 1. In 2009, when the data collection started, 18,836 (4,897 women, 13,939 men) were employed as police personnel (The National Police Board, 2009). From this population, 7,658 (1,991 women and 5,667 men) worked as patrolling police officers (PPOs) and were identified in collaboration with the Swedish National Police Board. A power analysis with an 80% power and a confidence level at 0.05 proposed an inclusion of 660 PPOs in respective female and male group. In respect to this analysis 858 PPO were included in in each group due to the expected number of dropouts. Due to unknown addresses and recently changed employment, 162 participants were excluded and the final invited participants to the study included 1,554 (778 women, 776 men). After three reminders, the response rate was 55% (n=856) in total, 56% for women (n=437) and 53% for men (n=419).
Patrolling police officers

n=7658

(1991 women - 5667 men)

Adequate sample size based on stratification by gender

(858 women - 858 men)

Invited to the study

(778 women - 776 men)

Excluded due to unknown addresses

(n=162)

Dropouts

(n=698)

Participating in the study

(437 women - 419 men)

Figure 1. Flow chart of inclusion process for participating in study II-IV
Data collections and procedure

Interviews

Narrative interviews were performed for Paper I by SBE and lasted 30 – 45 minutes. Six interviews were performed in 2003 and three were performed in 2008. The interviews started with one open question where the interviewee was asked to narrate and reflect upon experiences from taking care of injured and deceased people involved in a traffic accident. An interview guide was used with the aim of facilitating and clarifying the informants’ stories. The opening question was, “Please tell me about any accident when you have taken care of injured and dead people.” Follow up questions were, “Tell me more”; ”What did you feel then?”; “What did you experience?”; “What happened then?” and “How did you reflect upon this?” All the interviews were tape-recorded and later transcribed verbatim.

Measurements

Papers II-IV was based on a questionnaire including data from the Maslach Burnout Inventory (MBI); the General Nordic Questionnaire for Psychological and Social Factors at Work (QPS Nordic), Karasek and Theorell’s Job Demand-Control-Social Support Model (JDCS), and the Stress of Conscience Questionnaire (SCQ). For assessing coping, the Ways of Coping Questionnaire (WOCQ) instrument was used. Questions on demographic characteristics such as sex, age, civil status, children living at home, type of duty, employment status, and lifestyle characteristics (e.g., physical exercise, drinking, and smoking habits) were also included. The questionnaire and an information letter followed by informed consent about agreement for participating were sent to the participants through their work. Each included instrument is described below.

The Maslach Burnout Inventory (MBI) was used for analyzing the participants’ mental health with a focus on burnout. A Swedish version of the MBI was used (Maslach, Jackson, & Leiter, 1996; Maslach et al., 1981), which
was translated and validated by Hallsten (1985). The MBI consists of three subscales: *emotional exhaustion* (EE) with nine items, *depersonalization* (DP) with five items, and *personal accomplishment* (PA) with eight items. In this investigation, we only used EE and DP. All subscales were scored on a Likert-scale ranging from “never” (1) to “every day” (7). A total score was used for each subscale giving an EE score ranging from 9 to 63, and a DP score ranging from 5 to 35. EE was categorized into three levels using ≤16 (low), 17 – 27 (average), and ≥28 (high). For DP, corresponding three-level categorization was ≤5 (low), 6 – 10 (average), and ≥11 (high), according to the Maslach Burnout Inventory Manual (1996). The MBI instrument has been tested for validity and reliability, and Cronbach alpha (α) for each scale was: EE=.90, DP=.79 and PA=.71 (Maslach et al., 1996). In several studies, the MBI instrument has also been used with similar Cronbach α: Glasberg et al. (2007) used EE=.90, DP=.69, and PA=.80; and Juthberg et al. (2008) used EE=.90, DP=.79 and PA=.71. From a police context, similar Cronbach α were reported: EE=.88 and DP=.78 (Storm & Rothmann, 2003).

The *General Nordic Questionnaire for Psychological and Social Factors at Work* (*QPS Nordic*) was developed in a Nordic context by researchers affiliated with the National Institute for Working Life to be a measure of psychological and social factors in the work environment (Dallner, 2000). The instrument shows good psychometric properties for assessing psychological and social factors at work (Wännström, Peterson, Åsberg, Nygren, & Gustavsson, 2009a). The instrument has 118 items, divided into 26 separate subscales and separated into three modules (task module, organizational module, and individual model). Each of these modules can be regarded as separate instruments and subscales. For this study, only items from the organizational module were used. The subscales used for this study were: the empowering and fair leadership subscale (eight items), the organizational climate subscale (five items), and the organizational culture subscale (six items). Ratings scales for each item varied between 1 (“very seldom”) and 5 (“very often or always”). A mean score was calculated for each subscale based on the items within the subscale to give an index. Low values were
considered a positive “good climate,” while high values were considered a negative “bad climate.” Internal consistency with Cronbach $\alpha$ was found to be good for these three subscales varying from 0.68 to 0.86 (Wännström et al., 2009b).

Karasek and Theorell’s questionnaire *Job Demand-Control-Social Support Model* (JDCS) was used measuring psychological demand (five items), decision latitude or control (six items), and social support (six items) (Johnson & Hall, 1988; Karasek & Theorell, 1990). Items on demand and decision latitude were answered from 1 (“often”) to 4 (“never”). Scores were reversed in negatively worded items. High scores on decision latitude is interpreted low decision latitude (low control) since scores were reversed in our study indicating low values to be positive and high values negative. Responses to social support were answered on the same numerical scale, but corresponding from “agree completely” to “do not agree at all.” A mean score of all items in each subscale was calculated where higher values indicated higher psychosocial strain. This instrument is commonly used by researchers in occupational health (Lindeberg et al., 2011; Staland-Nyman, Alexanderson, & Hensing, 2008) and tested for validity and reliability with Cronbach $\alpha$ for job demands $=.74$ and for job control $=.79$ (Taris et al., 2010).

The *Stress of Conscience Questionnaire* (SCQ) was used to estimate stress related to troubled conscience. The SCQ instrument consists of 9 items, divided in two parts (A and B). The A part evaluates the frequency of certain common stressful situations related to conscience present at work, and how often they appear, assessed on a 6-point Likert scale where 1 corresponded to “never” and 6 to “every day.” The B part measures to what extent these stress factors lead to a troubled conscience. In this study, only the A part was used. A mean score of all items in the subscale was calculated where higher values indicated stressful situations more frequently. The SCQ instrument has been validated for Swedish conditions (Glasberg et al., 2006; Åhlin et al., 2012),
showing good internal consistency with Cronbach $\alpha =.83$ (Glasberg et al., 2006) and Cronbach $\alpha =.82$ (Juthberg et al., 2008).

The *Ways of Coping Questionnaire* (WOCQ) was used for estimating coping strategies. The WOCQ was constructed and revised by Folkman and Lazarus (1988) and consists of 66 items indicating thoughts and behaviour used to manage specific stressful encounters. Participants were asked to think about how to manage a specific situation given in a written format as follows: “*Last week I was the first person arriving in a car accident. One child was bleeding a lot from the intestines.*” The coping strategies are estimated on a four-point Likert scale (0= does not apply and/or not used; 1= used somewhat; 2= used quite a bit; 3= used a great deal). The scores for each coping scale were calculated following the manual of WOCQ (Folkman & Lazarus, 1988). High scores indicated that the individual used the behaviour described by that scale more often in coping with that specific stressful event. Raw scores were calculated by adding the score for each item on the scale, to get a total score. The WOCQ has come to be used globally in different countries and in different contexts (Ahlström & Wenneberg, 2002; Kieffer & MacDonald, 2011; Munet-Vilaroa, Gregorich, & Folkman, 2002; Padyab, Ghazinour, & Richter, 2012). The original WOCQ contains eight subscales consisting of 16 distractors and 50 substantial items divided into: emotion-focused coping (Accepting Responsibility (AR) with 4 items; Distancing (DI) with 6 items; and Escape Avoidance (EA) with 8 items); and problem-focused coping (Confrontive Coping (CCo) with 6 items; Planful Problem Solving (PPS) with 6 items; Self-Controlling (SCo) with 7 items; Positive Reappraisal (PRe) with 7 items; and Seeking Social Support (SSS) with 6 items (Kieffer & MacDonald, 2011). The last two subscales are both problem-focused and emotion-focused. Internal consistency with Cronbach $\alpha$ from the original eight-factor solution was reported as follows: AR=0.66, DI=0.61, EA=0.72, CCo=0.70, PPS=0.68, SCo=0.70, Pre=0.79, SSS=0.76 (Folkman et al., 1986). The suitability of the original eight factor-solution in our sample is assessed in Paper III.


**Ethics**

Ethical approval was given by the Ethics Committee of the Faculty of Medicine, Umeå University (Dnr 03-079) for Paper I. Chief of the patrolling police officers gave the researcher (SBE) permission to perform the study at the local police authority. For Papers II-IV, ethical approval was given by the Regional Ethical Review Board in Umeå (Dnr 08-186 M). A letter of informed consent also with information about the project was returned by the participants with the questionnaire. All the participants were assured of confidentiality and the voluntary nature of participation, and the possibility to withdraw from the project at any time. Permission for collecting data from the 21 local police authorities was obtained in an agreement with the Department of Human Resources of the Swedish National Police Board, Stockholm.

**Analysis**

**Interviews**

In *Paper I*, a qualitative content analysis (Beck & Polit, 2011; Graneheim & Lundman, 2004) was used for analyzing the audio-recorded and transcribed interviews. Qualitative content analysis is a method for describing meanings, intentions, and context useful in the analysis of individuals or group experiences and attitudes. The method has its roots in objective and quantitative description of communication (Berelson, 1952) and has over time, especially in nursing research and education, been used for qualitative approaches with varying degrees of interpretation (Graneheim & Lundman, 2004). Qualitative content analysis focuses on finding similarities and differences in a specific text, in this case based on the narrative interviews performed with nine male PPOs. The analysis was performed in different steps: first, reading the whole text to gain a sense of the material; second, readings of the text several times and selected paragraphs relevant to the aim were marked “*meaning units*”; third, “*meaning units*” were condensed to shorter texts—still preserving the core meaning, abstracted—and coded
relevant to the aim of the study; finally, “codes” were further abstracted into “subthemes” and “themes.” Throughout the analysis, a back and forth movement was performed between the different phases, not a linear process as it appears when describing the process (Graneheim & Lundman, 2004). All authors participated in the process throughout the analysis continuously by reading and reflecting several times upon the results from the different analytic steps and the final interpretations.

**Statistical analysis**

All statistical analysis was performed with PASW Statistics 18.0 for Papers II-IV, except for the exploratory and confirmatory factor analyses in Paper III where LISREL 8.8 was used. For Paper II, descriptive statistics were presented as means (m) and standard deviations (sd) for continuous variables and percentages for categorical variables. Student t-tests for independent groups were calculated to compare MBI scales as well as the psychosocial work environment, psychological demand, decision latitude, and seeking for social support between male and female police officers. Pearson correlation r coefficients were applied to assess the correlations between the EE and DP MBI scales and age, stress of conscience, psychosocial work environment, psychological demand, decision latitude, and social support. Logistic regression analyses were used for investigating the relationship between EE and DP and psychosocial work environment factors, first by univariate analyses followed by forward stepwise multiple logistic regression. For calculating odds ratio of EE and DP, subscales were dichotomized into two groups: low and average constituted the healthy group (value 0), and high constituted the unhealthy group (value 1).

For Paper III, the original 8-factor solution provided by Folkman and colleagues (Folkman & Lazarus, 1988; Folkman et al., 1986) was tested using confirmatory factor analysis (CFA). In the following stage, exploratory factor analysis (EFA) was performed on half the sample which was randomly selected from the total sample. Scree plot and parallel analysis were used as a
factor retention method in order to decide the optimum number of factors in the EFA (Pallant & Bailey, 2005), suggesting a six factor solution. Model modifications were applied and then the structure was tested on the other half of the sample by means of CFA. The model was evaluated by means of the Goodness of Fit Index (GFI), the Incremental Fit Index (IFI), the Adjusted Goodness of Fit Index (AGFI), and the Comparative Fit Index (CFI), using a threshold of 0.9 to indicate a good fit. The models were also evaluated by Root Mean Square Error of Approximation (RMSEA) and 90% confidence interval (CI). Cronbach’s alpha and construct reliability and variance extracted measures were used to assess the reliability of each coping scale.

DIF analyses were used for finding out whether there were differences in responses to a particular item in a subscale with regard to gender (Scott et al., 2010). Ordinal logistic regression was performed, which is recommended as a useful method when detecting DIF at the ordinal level (Kristjansson, Aylesworth, Mcdowell, & Zumbo, 2005; Zumbo, 1999). In this study, uniform DIF was evaluated, which means that main effects of gender differences were presented (Zumbo, 2007).

For Paper IV, descriptive statistics were presented as means and standard deviations for various demographic data such as individual characteristics, ways of coping scales, burnout, and demand/decision/social support. Pearson correlation coefficients were applied to assess the correlations between EE and DP and demand, decision latitude, social support, coping strategies, and stress of conscience. To evaluate the predictive impact of the various independent variables on the EE and DP MBI subscales, a hierarchical multiple regression analysis was used. The variables were entered in three steps: first, job demand/decision/social support; second, coping strategies; and third, stress of conscience. This procedure was repeated for men and women separately.
Results

An overview of main findings from Papers I, II, III and IV is presented below. Detailed findings from each study are presented by the original publications appended to the end of the thesis.

Paper I

The results showed that the PPOs were secure with the support system, were confident about prior successful actions, and were burdened with uncertainty. The results are presented in Table 2.

*Table 2. Subthemes and themes: male patrolling police officers’ experiences of traumatic situations*

<table>
<thead>
<tr>
<th>Subthemes</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having developed various strategies</td>
<td>Being secure with the support system</td>
</tr>
<tr>
<td>Feeling supported</td>
<td></td>
</tr>
<tr>
<td>Knowing and doing what is necessary</td>
<td>Being confident about prior successful actions</td>
</tr>
<tr>
<td>Knowing one’s own capacity</td>
<td></td>
</tr>
<tr>
<td>Uncertainty about what should have been done</td>
<td>Being burdened with uncertainty</td>
</tr>
<tr>
<td>Feeling inadequate</td>
<td></td>
</tr>
</tbody>
</table>

The PPOs felt secure and supported in their occupation from the organization when they used strategies, which had been developed over the
years within the organization. They also felt confident and expressed that knowing and doing what was necessary made them feel successful in their actions when arriving first to a traffic accident. As a first responder, most of the PPOs had strategies developed on the basis of their own knowledge, and they also felt secure with the support system in their organization, which enabled them to act in traumatic situations. When the PPOs did not have sufficient time to prepare themselves before facing traumatic situations with severely injured and sometimes deceased persons, feelings of inadequacy appeared. They sometimes had vivid memories from traumatic situations and could describe events in details. The PPOs expressed feelings of powerlessness and that the experiences still were with them like a burden. Results from the analysis were reflected through perspectives of gender theories according to Connell (2005) and Dahlgren (2007).

**Paper II**

Results from Paper II showed that 30% of female PPOs, and 26% of male PPOs had high levels of EE. However, the difference in the mean value of the total score of EE between female and male PPOs was not significant (Table 3). High levels of DP were reported for 52% of female PPOs, while the corresponding value for male PPOs was 60%. In contrast to EE, there was a significant difference in the mean value of total score for DP between female and male PPOs (Table 3).
Table 3. Descriptive statistics of individual characteristics, WOCQ, JDCS, MBI, SCQ-A and QPSNordic among female (n = 437) and male (n = 419) PPOs

<table>
<thead>
<tr>
<th></th>
<th>Women</th>
<th></th>
<th>Men</th>
<th></th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong>&lt;br&gt;<strong>Sd</strong></td>
<td>Mean</td>
<td>Sd</td>
<td>Mean</td>
<td>Sd</td>
<td></td>
</tr>
<tr>
<td>Age in years</td>
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<td>6.9</td>
<td>40</td>
<td>10.7</td>
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</tr>
<tr>
<td>Years of employment</td>
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<td>3.8</td>
<td>12</td>
<td>5.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PDi</td>
<td>11.81</td>
<td>6.44</td>
<td>10.97</td>
<td>6.46</td>
<td>0.058</td>
</tr>
<tr>
<td>PPs</td>
<td>16.51</td>
<td>3.98</td>
<td>15.43</td>
<td>4.06</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CCo</td>
<td>6.47</td>
<td>1.63</td>
<td>5.63</td>
<td>1.72</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>WTh</td>
<td>5.20</td>
<td>3.08</td>
<td>3.92</td>
<td>2.67</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SCo</td>
<td>6.11</td>
<td>1.58</td>
<td>5.84</td>
<td>1.42</td>
<td>0.010</td>
</tr>
<tr>
<td>PoR</td>
<td>6.45</td>
<td>2.25</td>
<td>5.72</td>
<td>2.27</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Demand</td>
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<td>0.43</td>
<td>2.66</td>
<td>0.47</td>
<td>0.082</td>
</tr>
<tr>
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<td>1.89</td>
<td>0.36</td>
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<td>Soc.support</td>
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<td>0.49</td>
<td>1.72</td>
<td>0.45</td>
<td>0.193</td>
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<tr>
<td>SCQ-A</td>
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<td>0.58</td>
<td>2.76</td>
<td>0.68</td>
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<tr>
<td>EE</td>
<td>24.37</td>
<td>7.67</td>
<td>23.88</td>
<td>8.65</td>
<td>0.393</td>
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<tr>
<td>DP</td>
<td>12.66</td>
<td>5.19</td>
<td>14.14</td>
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<td>&lt;0.001</td>
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<tr>
<td>QPS,org.climate</td>
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<td>0.436</td>
</tr>
<tr>
<td>QPS,leadership</td>
<td>2.81</td>
<td>0.78</td>
<td>2.86</td>
<td>0.76</td>
<td>0.279</td>
</tr>
</tbody>
</table>

PDi-Psychological Distancing, PPs-Planful Problem solving, CCo-Confrontive Coping, WTh-Wishful Thinking, SCo-Self Controlling, PoR-Positive Reappraisal

Almost all the psychosocial work variables were correlated with respective EE and DP for both women and men. With increasing age, DP decreased for both women and men. All independent variables were significantly associated with EE for both women and men. For DP, a similar pattern was found except for empowering and fair leadership where no significant association was found. Findings from a multiple logistic regression showed
that SCQ-A (OR= 3.83), high demands (OR= 3.88), and negative organizational climate (OR= 1.98) increased the risk of having emotional exhaustion for women. For men, SCQ-A (OR= 4.26), low control or decision latitude (OR=2.72), and high demands (OR= 3.88) increased the risk of having emotional exhaustion (Figure 2a). Only SCQ-A increased the risk of having depersonalization for both women and men (OR=4.17 vs. OR=3.49), (Figure 2b).
**Figure 2a.** Adjusted odds ratio of being emotionally exhausted

**Figure 2b.** Adjusted odds ratio of being depersonalized
Paper III

For evaluating the psychometric properties of the Ways of Coping Questionnaire (WOCQ), confirmatory factor analysis and exploratory factor analysis were performed. Results from the parallel analysis showed a six-factor solution for WOCQ applicable to a Swedish police context proposing some changes from the original 8-factor solution presented by Folkman et al. (1986). Due to low loading factors (less than 0.3), 10 items out of the 66 items were deleted (1, 2, 8, 13, 16, 21, 35, 65, 66, and 50). Due to high measurement error, 16 items were deleted (3, 12, 14, 15, 22, 26, 27, 37, 41, 43, 44, 48, 49, 53, 54, and 62). For the final model, a total of 26 items were removed due to either low loading factors in EFA or high measurement error in CFA, showing reasonable fit indices for RMSEA and CFI. The validated six-factor questionnaire included 40 items belonging to six subscales presented as follows: Psychological Distancing (17 items); Planful Problem Solving (9 items); Confrontive Coping (3 items); Wishful Thinking (4 items); Self Controlling (3 items); and Positive Reappraisal (4 items). Differential Item Functioning (DIF) analysis performed on the six-factor solution showed 15 items fulfilling criteria for uniform DIF, suggesting both similarities and differences in relation to gender. The cumulative frequency of these items differed significantly between women and men. All in all, differential item functioning for gender was detected for about a third of the items regarding the six-factor solution.

Paper IV

An overview of descriptive statistics is shown in Table 3. The mean age for women and men differed significantly—34 years old (SD=6.9) for women vs. 39 years old (SD=10.7) for men. Women’s years of employment were also significantly lower than for men (6 years vs. 12 years). Results showed that stress of conscience was significantly correlated with both EE, $r = 0.57$, p<0.001, and DP, $r = 0.47$, p<0.001. Moreover, most of the independent variables—i.e., psychological demand, decision latitude, social support, and
coping scales—also correlated with EE and DP. Results showed that in each step of the hierarchical multiple regressions, each set of variables improved significant to the model. For both women and men, stress of conscience had the most predictive impact on EE (standardized $\beta=0.47$, $p<0.001$, and $\beta=0.41$, $p<0.001$, respectively), followed by high demand (standardized $\beta=0.15$, $p<0.001$, and $\beta=0.21$, $p<0.001$, respectively). All the variables together accounted for 38% of the variance in EE among women and 40% among men.

In the other hierarchical multiple regression analysis performed separately for women and men with DP as outcome variable, a similar pattern was found. Each set of variables also contributed significantly to the model, which improved the model at each step. For women, stress of conscience was the most predictive impact factor on DP (standardized $\beta=0.38$, $p<0.001$), followed by decision latitude (standardized $\beta=0.13$, $p<0.001$). For men, stress of conscience had the most predictive impact factor on DP (standardized $\beta=0.54$, $p<0.001$), followed by psychological distancing (standardized $\beta=0.14$, $p<0.001$). The full model with all the variables together accounted for 19% of the variance in DP for women, while the corresponding figure for men was 29.7%.
Discussion

In the first part of the discussion, the main findings in the thesis are discussed and in the second part methodological considerations are presented.

Results from Paper II confirmed our assumption that EE and DP were common among both female and male PPOs. In comparison with studies of police personnel/PPOs from other countries, both prevalence and mean values of total scores for EE and DP in our studies are higher. Lower mean values for EE and DP for police officers were reported by Martinussen et al. (2007) and Kop and Euweeema (2001), relative to our study. Also in a sample of police officers from South Africa and across occupations in the Netherlands, lower mean values for EE and DP compared to our study were found (Schutte, Toppinen, Kalimo, & Schaufeli, 2000; Storm & Rothmann, 2003). In Martinussens’ study (2007), other occupational groups from Norway (traffic controllers, journalists, and building constructors) also reported lower mean values for EE and DP compared to our study. Furthermore a study of general practitioners in the Netherlands reported lower mean values for EE and DP compared to our study (Houkes, Winants, Twellaar, & Verdonk, 2011).

In our study, EE did not differ between women and men but DP was lower in women compared to men. However, there is a lack of studies focusing on gender differences in prevalence and levels of burnout measured by the Maslach Burnout Inventory between female and male police personnel (Kurtz, 2008; Thompson et al., 2005). In addition, female PPO in our study had higher mean value in EE compared with female police personnel from Australia (Thompson et al., 2005). Reasons for the lack of studies included both women and men might be due to most studies being based on samples with a strong male majority, allowing the experiences of women to be therefore left out. More thorough analyses regarding gender differences have
been insufficient due to difficulties in recruiting women police officers in study populations (Thompson et al., 2005). Prevalence for burnout in the general population varies in Sweden and seems to be slightly higher for women with figures varying from 17 – 23%, compared to 5 – 12% for men (Lindert et al., 2009; Magnusson Hanson, Theorell, Oxenstierna, Hyde, & Westerlund, 2008; Norlund et al., 2010). Differences in prevalence and mean values in burnout can be due to the use of different burnout questionnaires, still the most commonly used is the MBI – questionnaire, (Norlund, 2011). The findings from our study with higher levels compared to earlier studies of both EE and DP are noteworthy and contribute to reports of psychological strain where women and men working in police occupations were highly represented (SWEA, 2010).

In this thesis the PPO described a burdened work load when they were exposed by difficult situations. This findings is somewhat supported by the self-rated results in paper II and IV. Male PPOs felt uncertain about what should be done when they reflect on a scenario about taking care of traffic accident victims. They also related feelings of powerlessness and described how the experiences still were with them as a burden when reflecting upon the scenario. These descriptions were interpreted as “being burdened with uncertainty” (Paper I). To further understand the meaning of “being burdened with uncertainty” results from self-estimated coping strategies (WOCQ) and stress of conscience, SCQ-A will be taken into account. In Paper I, the PPOs focused on what to say and do, they concentrated on special duties in relation to a narrated scenario, and they also expressed “feelings of being secure and confident.” This could be interpreted as problem-focused coping in accordance with Folkman et al. (2004) as well as Penley et al. (2002). Nevertheless in specific situations, PPOs in our study experienced “burdened with uncertainty,” causing feelings of powerlessness and inadequacy in our study, interpreted as emotion-focused coping, also in accordance with Folkman and Moskowitz (2004) and Penley et al. (2002). “Being burdened with uncertainty” can also be interpreted as signs of a troubled conscience since the male PPOs in their narratives expressed these
feelings as if the experiences still were with them. This finding is congruent with Hanna Arendt’s (1971) reasoning about conscience is always with us, appearing as an afterthought (p.444).

Results from studies II and IV showed that stress of conscience, high demand, and negative organizational climate increased the risk of having EE for women. For men stress of conscience, high demand and also low control increased the risk of having EE (II). According to the Job Demand-Control-Support (JDCS) model, the most negative psychological well-being is found among employees reporting high demands and low control (Stansfeld & Candy, 2006; Taris et al., 2010; Van der Doef & Maes, 1999), and this was confirmed in our studies (II and IV). Aasa et al. (2005) reported similar results from studies of ambulance personnel where worry about work conditions was related to psychological demands for both female and male ambulance personnel. Taris et al. (2010) concluded that chronic exposure to high demands might contribute to high levels of strain which can be of importance for Swedish PPOs’ work environment and should be considered by the Swedish National Police Board, since our results point in that direction (II-IV). To conclude, these results should be considered in order to improve the psychosocial work environment for Swedish police personnel.

Interestingly, findings from Paper IV indicated that stress of conscience was the most predictive impact on EE for both women and men, when all the other independent variables including coping strategies were taken into account. Stress of conscience was also of importance for EE when considering occupational health in a nursing context (Glasberg et al., 2007; Glasberg, Eriksson, & Norberg, 2008; Juthberg et al., 2008). It is interesting that regardless of coping strategies, stress of conscience was the most important predictor for EE followed by high demands but with less impact, findings which to our knowledge not have been reported among police personnel before. Predictors for DP differed to some extent between women and men. Low control together with stress of conscience for women was the most important predictive factors for DP. This indicates that low control
plays a more important role than coping strategies for having DP. For men, the “Psychological Distancing” coping strategy—with items such as “avoided being with people in general” or “I made a promise to myself that things would be different the next time”—had an impact on DP to a lesser but still notable extent. This result for male PPO, could be interpreted such as, using “Psychological Distancing, as a coping strategy, considered to be emotion-focused might contribute to negative well-being and congruent with Lazarus and Folkman’s (1984) theory on emotion-focused coping as being negative for the individual’s well-being.

In general low social support increases the risk of having burnout (Lindblom et al., 2006; Lindeberg et al., 2011). Out of this we assumed that social support also should decrease the risk of having EE or DP. (Paper II and IV). However, results showed that for women social support was only associated significantly with EE, but with a much lower impact than stress of conscience (Paper IV). This indicates that reduced social support will increase EE for women, a finding similar to Thompson (2005). The Thompson study showed that work-based support from supervisors was predicted to reduce EE and improve family functioning for Australian policewomen. Thompson (2005) pointed to the importance of interventions focusing on supervisor training in support skills. Österlind and Haake (2010) reported from an interview study with female police leaders that “getting support to be a good leader” was one of the important discourses for being a good leader in the Swedish police organization. Looking to both Österlind and Haake’s (2010) findings and the results from our study, social support seems to be an important matter for improving the work environment within Swedish police organization. However, we will add that interventions also must include stress of conscience when developing rehabilitation programs.

As few studies have reported psychometric properties for the Swedish WOCQ the original eight-factor solution of the WOCQ was tested in Paper III. Our study resulted in a six-factor solution consisting of 40 items, which proved to be a suitable and valid instrument for evaluating coping in a
Swedish police sample. Another version consisting of 45 items from the original eight-factor solution showed reasonable fit and proved to be suitable for use in a Swedish context (Ahlström & Wenneberg, 2002; Lundqvist & Ahlstrom, 2006). However, this was used in a clinical setting and therefore not considered suitable for use in our sample. Further research for the suggested six-factor solution from our study is needed to check the labels of the subscales within a qualitative approach considering narrative interviews with PPOs in Sweden. Folkman and Moskowitz (2004) stated that coping measurements is both an art and a science. The art is to find the most appropriate and useful method for the research question; sometimes starting with a narrative approach with a small sample can be useful for defining the domains of stressors. The six-factor solution needs to be further investigated and evaluated in Swedish police populations but also with other methodologies such as narrative approaches, suggested by Folkman and Moskowitz (2004). Findings from the DIF analyses showed that 15 items from the six-factor solution reported uniform DIF, indicating the gender difference. For 10 of the items (out of 15), it was found that there was a probability of women scoring higher on those identified items, and five items indicated a probability for men scoring higher on those identified items. DIF analyses on WOCQ have to our knowledge not been reported before and further research is needed. Maybe qualitative approaches will deepening our understanding concerning the fact that women and men score higher on certain items, as suggested by Scott et al. (2010). Most of the items identified showing DIF for women are considered problem-focused according to the suggested six-factor solution, a finding contrary to Matud (2004) where women in a Spanish sample of the general population scored higher on emotional and avoidance coping.

It is important to include gender reflections (Harenstam, 2009) when investigating the relationship between health and work strain in order to decrease the risks of developing burnout and to improve the work environment for police personnel. Police work and the context in which it takes place have been described by several researchers as a “male-
dominated” and “macho” context, both internationally and nationally (Andersson, 2003; Fejes & Haake, 2013; Kop & Euwema, 2001; Van der Lippe, Graumans, & Sevenhuijsen, 2004; Kurtz, 2008). Kurtz (2008) claims that within the association between policing and hegemonic masculinity little room is left for feminine traits in the daily work for PPO’s and might limit the possible ways of responding for both women and men when facing stress and burnout. Our study showed high levels of both EE and DP and also that stress of conscience was the most predictive impact for EE and DP. Furthermore we found a significant higher mean value on DP for men compared to women. Our findings could be an indication for when acting and working in this male-dominated occupation where hegemonic ideas of masculinity are the prevailing norm might have consequences for both women and men in terms of their health (Courtenay, 2000; Connell, 2009). However in our study we have not specially studied the impact of masculine culture associations with work environment but our findings can contribute to knowledge about mental illness and health promotion for Swedish police structures when interpreting from perspectives of gender patterns and gendered regimes (Connell, 2009). Results from this thesis add perspectives in that area and contributes with knowledge in order to increase Swedish police organizational work to prevent gendered health hazards (cf., The National Police Board, 2004).

**Methodological considerations**

This thesis has used both quantitative self-reported measures and qualitative interview methods. With this combination of methods it was possible to gain different perspectives of the obtained knowledge, which can be useful when studying health and work environments (Östlund, Kidd, Wengström, & Rowa-Dewar, 2011). Information from narrative interviews gave knowledge from the participants and information from self-reported health measurements regarding health, the psychosocial work environment, and coping strategies gave knowledge out of the researcher’s hypothesis. The strength of the qualitative method used in this study was that the narratives
illuminated male PPOs’ experiences of taking care of traffic accident victims with rich and detailed stories. Folkman and Moskowitz (2004) suggest combining narrative approaches with questionnaires since narratives overlap but are not equal to quantitative approaches and can be used for uncovering ways of coping not included by the WOCQ instrument. In addition, it is also important to point out that narratives from a limited proportion of PPO should not be generalized to the population. Instead, the quantitative studies based on a stratified randomized sample give us the opportunity to generalize the results to the population that is PPO in Sweden.

One limitation in several studies is that male PPOs are over-represented (McCarty et al., 2007; Martinussen et al., 2007; Gächter et al., 2011). It is of utmost importance to include female PPOs in further studies. Another limitation in our study is the fact of the interviews was performed within four years passed. However, the same interviewer conducted all the interviews and the consistency of the interviews was similar and during this period no specific changes regarding police education or the police work environment were executed. The interviews were read through several times by all the authors in the research group finding no specific differences between the two groups of interviews. When performing qualitative content analysis, three important issues need to be discussed: trustworthiness, transferability, and credibility (Graneheim & Lundman, 2004). To achieve trustworthiness, our intention was to collect data with multiple meanings and to be aware of the fact that different interpretations were possible. Credibility is another aspect of trustworthiness, aiming at choosing participants with various experiences. In our sample of male PPOs, their experience of police work ranged from one to nine years. Transferability within qualitative content analysis refers to the extent to which one’s findings can be transferred to a similar context and this can be judged by how well the researcher has described the context and culture to which the participants belong. Transferability can also be judged by how good and appropriate quotations are chosen to strengthen presentations from the analytic process; our study presented quotations from participants and further abstracted these to subthemes and themes.
Measurements used in this thesis are well known and have been used previously in various contexts studying work environments. All the included scales were tested for internal consistency and reliability with acceptable and corresponding values of Cronbach alpha, compared to other studies. Another strength of our study was the stratified sample for gender resulting in an almost equal number of female and male PPOs included in the study. Since the police occupation is male-dominated, usually women are underrepresented in police studies (Kurtz, 2008); our sample is unusual and can add to knowledge about gender differences with reliable results.

A limitation of this study was the response rate (56%); however, since the sample was recruited from all 21 regional police authorities in Sweden, our findings can be considered representative of Swedish patrolling police officers. Considering age distribution, our sample is relatively representative in comparison of all police officers in Sweden. In our sample, 62% of female PPO’s were in age group 25-35, which also is the largest group of Swedish policewomen. When comparing our sample of male PPO 50% of the sample was in age group 30-40 compared to the age group 30 – 34, which are one of the two largest groups of Swedish policemen (The National Police Board, 2012).

Another limitation with the study is the cross-sectional design where no causality can be explained, but still valuable knowledge about relationships between several exposures in work environment and the outcome in this case EE and DP was reported. Out of this our findings from this study must be interpreted with caution, but still it can be a starting point and serve as a baseline for further studies. With this cross-sectional design comparison on gender at a single point were obtained. Further studies for Swedish PPO should also consider longitudinal studies for detecting developments or changes in characteristics of the population PPO at both the individual level and on group level.
Conclusions and clinical implications

Our assumptions for this thesis were confirmed to a certain extent from the four included studies. Burnout measured as EE and DP was common, with high levels of EE and DP for both women and men. Higher levels of EE relative to other studies were reported regardless of gender, while higher relative levels of DP indicated a significant difference between female and male PPOs. Additionally, our study showed that stress of conscience had the most impact on the EE and DP outcome variables for both women and men, even when coping strategies were taken into account. Furthermore high demand had an impact on EE, similar for both women and men. For women also low social support was a predicting factor for EE, while for men low control was a predicting factor for EE. Coping strategies had no impact on EE for either women or men. Coping strategies “Psychological Distancing”, “Wishful Thinking” and “Positive Reappraisal” was significantly associated for men but to a less extent than stress of conscience. For women low social support was significantly associated with DP but also to a less extent than stress of conscience.

Research in policing and work environment from a health perspective is a relatively unexplored field within the Swedish police context compared to international perspectives from different countries (Anderson et al., 2002; Anshel, Umscheid, & Brinthaupt, 2012; Hawkins, 2001; Liberman et al., 2002). Reasons for the lack of police research are debatable and often discussed in various Swedish communication channels. Further studies in this area are needed and, based on our findings, we suggest studies with the instruments used in our study but also qualitative studies, when investigating work environment for Swedish patrolling police officers. Findings from Paper I where PPO’s expressed “being burdened with uncertainty” indicated troubled conscience was to a certain extent confirmed with our findings in Paper II and IV since stress of conscience was the most predictive factor for EE and DP. From our results we suggest that further research focusing health and work should also consider troubled conscience.
using the instrument SCQ-A or qualitative methods. Such approach is rare in the field of working life research. More knowledge is also needed about coping strategies and the WOCQ instrument seems to be suitable for use in Swedish police context but needs further validation. However, the findings from this thesis highlight important areas in the work environment for Swedish police and the necessity of further studies both qualitative and longitudinal studies in order to allow police to be well equipped and prepared to do an optimal job in the diverse society that Sweden is.
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Först vill jag framföra mitt varma tack till alla poliser i Sveriges avlånga land för att ni tog er tid och fyllde i enkäten, tack också till alla de poliser som delade med sig av sina erfarenheter till den första studien.

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