

Partnership Relation Quality modulates the effects of Work-stress on health.

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"It is not a matter of perceiving first, but rather the consolidation of associations between the previously-known and the hitherto-unknown that provides the essential focus and the implications of scientific discovery"

”Det är inte att se något först, utan att upprätta fasta förbindelser mellan det tidigare kända och det dittills okända som utgör själva kärnan och innebörden av en vetenskaplig upptäckt.”

Hans Seyle 1956.

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To Sophia, for being you.

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Ann-Christine Andersson Arntén

Juni, 2009

ABSTRACT

The present studies included 884 participants in total, in five different studies referred to in the four articles. All five studies observed participants from different types of occupation in order to obtain a distribution and a diversified group of individuals. These occupations, that are representative, cover both private and public sectors and occupations that require longer as well as shorter educational backgrounds. Moreover, both 'blue-collar' and 'white-collar' personnel are included. The over-all conclusion is that partner relation quality and sexual life satisfaction may function as a buffer against the negative effects that work-related stress have upon health. Moreover, the results indicate that affective personality is associated with health variables such as depression, anxiety, general stress, energy, and psychological and somatic subjective stress reactions. Furthermore, the results indicate gender differences concerning affective personality, partnership relations quality, sexual life satisfaction and work-related stress that will eventually require deeper examination. Taken together, the consensus of these finding indicate the very real advantages present in partnership relation described by tenderness and understanding and parked by a 'nutmeg of passion'.

Key words: positive and negative affect, work-related stress, partnership relation quality, sexual life satisfaction.

POPULÄRVETENSKAPLIG REDOGÖRELSE

Arbete, kärlek (här i form av en stadigvarande parrelation), och hälsa är tre viktiga livsområden vilka utgör basen för denna avhandling. Dessa tre faktorer utgör en inbördes påverkan på varandra. På så sätt påverkar vår parrelation vårt känslomässiga tillstånd vilket i sin tur påverkar de känslor, det engagemang, och den produktivitet vi uppvisar på vår arbetsplats. I den industriella västvärlden, upptas en stor del av individens vakna timmar av arbete eller arbetsplanering. Ekonomisk och teknisk utveckling tillsammans med den ökade globala konkurrensen mellan företag har medfört att allt större krav ställs på den tid och energi individen dagligen förväntas bidra med under sin arbetstid. Men människor förväntar sig, å sin sida, att bli uppmärksammade och uppskattade för denna tid och detta engagemang. När en individ börjar sin professionella karriär gör de ofta det med höga mål och förväntningar och de är idealistiska och motiverade. Om uppskattning och uppmärksamhet sedan uteblir leder detta till känslor kopplade till misslyckande. När de så känner att de misslyckats, när deras arbete känns oviktigt, och de upplever att de inte bidrar med något börjar de uppleva hjälplöshet, hopplöshet och slutligen utbränd. Det samma situation gäller för en parrelation. Relationen inleds med höga ideal, förväntningar, ambitioner och motivation. Om uppmärksamhet och uppskattning senare uteblir leder detta till känslor av misslyckande. Deras ansträngningar upplevs som meningslösa, vilket leder till upplevelse om att inte vara viktiga här i världen. Något som kan leda till känslor av hjälplöshet, hopplöshet och kanske även ett tillstånd som leder till utbrändhet. Om båda dessa situationer uppstår samtidigt, arbetsrelaterat och parrelaterat, ökar risken för utbrändhet och ohälsa dramatiskt.

Eftersom effekterna av vardagslivets, ibland små, men återkommande stressituationer, sakta kommer smygande sker förändringarna i våra liv till en början utan att vi märker dem. Vi anpassar och tänjer oss efter de krav och förändringar som sker, fram till den dag vi nått en sådan obalans att vi inte längre utan stor ansträngning klarar vår vardag. Risken är att vi då, men först då, inser att allt inte står rätt till. Vårt arbete och de nödvändiga sociala interaktionerna kräver allt för mycket av oss, vår relation är ansträngd till bristningsgränsen och själva utnyttjar vi den sista droppen av den reservenergi vi en gång har haft.

Resultatet av dessa studier visar på vilka faktorer som har en positiv eller negativ påverkan på de negativa effekter stress har på vår hälsa. En sådan viktig faktor är vårt positiva eller negativa känslomässiga tillstånd. Personer med högt negativt känsloläge (till exempel personer som alltid tror att saker och ting kommer att gå galet vad de än gör) har lättare att

drabbas av depression, ångest, generell stress och arbetsrelaterad stress. Dessutom har de lägre nivå på det positiva känsloläget, lägre grad av optimism, och sämre parrelation än individer med högt positivt känsloläge.

En annan sådan faktor som påverkar hur vi klarar att hantera och återhämta oss från stressfulla situationer är våra så kallade copingstrategier (hur vi hanterar situationer). Dessa strategier kan vara sådana att de antingen hjälper eller stjälper oss i vår strävan att handskas med livets svårigheter. Vi föds inte med färdiga copingstrategier utan vi lär oss dem under livets gång. Det positiva med detta är att har vi en gång lärt in dem så kan vi också lära om dem och därmed skapa nya copingstrategier. De copingstrategier som undersökts i denna undersökning är uppdelade på sådana som är kopplade till vår kognition, våra känslor, vår sociala förmåga, våra fysiska aktiviteter samt våra andliga och till tradition hörande värderingar. Resultaten visar på tydliga samband mellan copingstrategier och arbetsrelaterad stress, hälsa, samt kvalitet på så väl parrelation som sexliv. Dessutom visar resultaten visar även att kvinnor har högre grad av emotionell och andlig coping än män.

Ytterligare en faktor som allt mer påverkar vår hälsa är den arbetsrelaterade stressen. National Institute for Occupational Safety and Health, USA, menar att det sker en mycket snabb förändring inom arbetslivet och att arbetsrelaterad stress utgör ett hot mot arbetares hälsa och därmed även ett hot mot hela organisationens hälsa. Hög grad av arbetsrelaterad stress har visat sig ha samband med högre grad av ångest, allmän stress upplevelse, psykiska och somatiska stressreaktioner samt högre grad av negativ affekt. Resultatet visade att arbetsrelaterad stress kunde förutsäga högre grad av depression, ångest, allmän stress, psykiska stressreaktioner, och negativ affekt. Kvinnor visade sig uppleva högre grad av arbetsrelaterad stress i förhållande till män.

Det andra området som var basen i avhandlingen omfattar parrelationen och kvaliteten på parrelationen och dess koppling till vår hälsa. Resultatet visar att vår parrelation är starkt kopplad till vår hälsa. Men inte bara till parrelationen som sådan utan även till hur bra vi uppfattar att vår parrelation är, det vill säga kvaliteten på relationen. Resultatet visar att de individer som ansåg sig leva i en parrelation med hög kvalitet på parrelationen hade lägre grad av ohälsa än personer som levde i parrelationer med lägre kvalitet. Intressant var att kvinnor och män skiljde sig starkt från varandra i detta hänseende. Kvinnor som levde i en parrelation med låg kvalitet hade signifikant högre nivå av ångest, psykiska stressreaktioner, allmän stress, mer sömnproblem och högre grad av negativ affekt men lägre grad av positiv affekt i förhållande till kvinnor vilka ansåg sig leva i en kvalitativt god parrelation. Å andra sidan

visade män som levde i en relation med medelnivå på kvaliteten i relationen sig ha högre grad av depression, ångest, psykologiska och somatiska stressreaktioner, mer allmän stress och mer negativ affekt än både de med lägre och högre kvalitet på sin parrelation. En inledande gruppintervju med åtta män visade att dessa män ansåg det betydligt värre att vara i en relation som varken var bra eller riktigt dålig. Anledning till detta vara att när man var i en relation som varken var bra eller riktigt dålig ansåg man att man hade ett stort ansvar att rätta till situationen. Detta krävde såväl mycket energi som engagemang. Något som påverkade hela livet, arbete så väl som den privat.

Avhandling tar även upp den mer intima delen av parrelationen, vår sexualitet. Resultatet visar på samband mellan vår sexualitet och vår hälsa. Även i detta avseende skiljer sig kvinnor och män åt. En sådan skillnad återfanns i de faktorer som påverkar hur nöjd man är med sitt sexliv. Resultatet visar att kvaliteten på kvinnors sexliv i högre grad påverkas av faktorer som är kopplade till kvaliteten på parrelationen så som hur man kommunicerar, hur mycket man kramas och kelas samt av den egna sexuella lusten. Vad gäller män påverkades hur nöjda de var med sitt sexliv, å andra sidan, av faktorer mer kopplade till den sexuella aktiviteten som sådan. Här var sådant som antal samlag, om detta antal samlag stämde överens med den önskade frekvensen samlag samt samlagstillfredsställelse viktiga faktorer. Det visade sig även att hur nöjd individen var med sitt sexliv påverkade hälsa och affektiva tillstånd. Kvinnor som var mindre nöjda med sitt sexliv hade, till exempel, högre grad av depression, ångest, negativ affekt och optimism. De hade dessutom fler tankar på skilsmässa och var mer missnöjda med sin parrelation. Även män som var mindre nöjda med sitt sexualliv visade på högre nivå av depression, ångest och allmän stress. Dessutom hade även de fler tankar på skilsmässa och ansåg att deras parrelation hade en sämre kvalitet.

Av intresse var dessutom att då arbetsrelaterad stress visades kunna förutsäga högre grad av depression, ångest, allmän stress, psykiska stressreaktioner, och negativ affekt motverkades dessa negativa effekter av en välfungerande parrelation och ett välfungerande sexliv.

Sammanfattningsvis kan fastslås att parrelationen och sexlivet kan fungera som buffert när individen utsätts för arbetsrelaterad stress och på så vis minska de negativa effekterna som arbetsrelaterad stress har på hälsa. Även ett positivt känsloläge och väl fungerande copingstrategier hjälper till att minska de negativa effekterna på hälsa som kan uppstå vid arbetsrelaterad stress. Genomgående observerades signifikanta skillnader mellan könen men

vad som skall betonas är att skillnader inom vardera kön var betydligt större än de mellan könen.

Modellen bakom detta är att individens behov av återhämtning. Efter att ha utsatts för stressfulla situationer behöver kroppen återhämta sig och fylla på sina lager av energi. Detta sker vanligtvis under de pauser, fika och lunch, som finns under en ordinarie arbetsdag. Dessutom sker det under den tid individen inte vistas på sin arbetsplats. Om möjligheten till återhämtning inte uppstår på grund av att arbetet inte tillåter pauser och luncher eller att man tar arbetet med sig hem eller ständigt arbetar övertid eller att man i parrelationerna har återkommande gräl och problem som skall lösas så uttöms kroppens reserver och ohälsa uppstår.

LIST OF PUBLICATIONS

This thesis consist of a summary and the following four papers:

- I Andersson Arntén, A-C., Jansson, B., & Archer, T. (2008). Influence of Affective Personality type and gender upon coping behavior, mood, and stress. *Individual Differences Research; 6(3)*: 139-168.
- II Andersson Arntén, A-C., Jansson, B., & Archer, T. (2008). Self-reported partnership relations and work-stress as predictors of health and illhealth. *Submitted article*.
- III Andersson Arntén, A-C., Rosén, S., Jansson, B., & Archer, T. (2008). Partnership relations mediate work-stress effects on health. *Submitted article*.
- IV Andersson Arntén, A-C., & Archer, T. (2008). Sexual satisfaction as a function of partnership attributes and health characteristics: effect of gender. *Submitted article*.

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Introduction

Work, love (as expressed by partnership relation), and health, are three major life domains that form the basis of the present work. Mood status, shaped in the home environment, influences feelings, commitments and productivity in the workplace (Edwards & Rothbard, 2000). In the industrial west, work occupies most of individuals' waking hours, since both economic and technical development associated with corporative competition have placed greater demands upon the time and energy of individuals (Brough et al., 2005). Furthermore, the job, albeit indirectly, leads to possibilities for meaningful activities, and provides material resources and the services we require. At a personal level, the job, through bosses and colleagues influence, and not least wage-packet, affects, among other things, individuals' self-esteem.

Daily life situations, often associated with stress, may be experienced difficult, even threatening. Stress seems to exert negative influences on both physical and mental health (cf. Palomo, Beninger, Kostrzewa, & Archer, 2004). Maladaptations between individuals and their environment (e.g. social or work) may lead to psychological burdens and stress-related somatic problems, and although early signs of stress are vague, the mobilization of chronic stress disrupts psychological and physiological functioning (Blom et al. 2003; French, Caplan, & Harrison, 1982; Sterling & Eyer, 1988). Certain individuals seem more vulnerable to the effects of stress than others, thereby risking psychosomatic illhealth, including cognitive difficulties and sleep problems (Jones & Bright, 2001). For example, anxious and neurotic individuals report more stress than others (Watson & Pennebaker, 1989), as well as rating themselves as unhappy (Seidlitz & Diener, 1993). The total influence, burden, of the stressors placed upon an individual is influenced by the individual's ability to relax and recover following a stressful situation (Frankenhaeuser, 1986). When work-related stress is markedly increased, influencing another major life domain, health, the importance of the quality of partner relations, the third major life domain, emerges, since this affects the opportunity for recovery.

“Cheerfulness is the best promoter of health, and is as friendly to the mind as to the body.”

Joseph Addison (1672-1719)

(In Trugade et al., 2004)

Positive and negative affect (PA & NA)

There are conflicting notions pertaining to how PA and NA are associated with each other, i.e. as bipolar extremities of the same construct or whether they represent two equally independent factors. In the latter case, it is implied that each factor may induce effects independent of levels induced by the other. Pressman and Cohen (2005) concluded that when acute emotional responses are reported, as in laboratory experiments, there tends to exist a strong negative correlation between PA and NA but that this correlation decreases over time, implying that since these expressions of affect aggregate over time, they tend to be relatively independent of each other. Wilson et al. (1998) indicated that under normal conditions there exist no significant correlations between PA and NA. The literature pertaining to NA does not indicate attempts to account for the potential confounding with positive emotions. Similarly, tests of PA regarding objective health that include measures of NA have not resulted in the weakening of the relation between PA and health (Pressman & Cohen, 2005).

Negative affect (NA), is associated with words such as fear, contempt, guilt, anger and depressiveness and is a condition of general distress (Staw, Bell & Clausen, 1986; Watson & Pennebaker, 1989). Conversely, positive affect (PA) reflects enthusiasm, activity, control and engagement and is a condition of high energy and concentration. Individuals expressing high PA reported higher levels of life satisfaction and quality of life, experience more ‘inner’ security, higher self-confidence (Varg, 1997). Greater focus upon ‘positive psychology’ heightens also the interest for PA influences upon health, stress, relations, etc.

Numerous studies have coupled the effects of PA and NA with health: for instance, a PsychInfo (20081015) search indicated that “positive affect and health” gave 4237 hits whereas “negative affect and health” gave 9576 hits, implying strong research links to both.

Regarding PA, it appears that an inverted U-function is subtended whereby low or very high levels may exert negative influences upon health, since individuals with extreme and unmotivated high levels of PA tend to ignore symptoms thereby opening themselves to illhealth in the longer perspective (Pressman & Cohen, 2005).

There is a consensus that PA exerts both short-term and long-term influences upon several domains, including work, marriage, mental and physical health, coping and self-image, etc, (Lyuomirsky et al., 2005; Pressman & Cohen, 2005); both general and induced PA can provide effects within these domains. Lyuomirsky et al. (2005) found indications of several positive effects of PA regarding factors related to work-life: individuals expressing high PA were at lower risk for job burnout, showed less negative work behavior, and a higher level of work satisfaction, cooperated better, were more productive and creative and had lower absence from work. Regarding partner relations also, high PA was linked to greater satisfaction in marriage and family life, and positive descriptions of partner. Individuals expressing high PA are more often engaged in partner relations than those expressing lower PA. The former possess a problem-focused style of problem-solving, solving problems quicker and more effectively, achieved partly through heuristic answers acquired in the past that release cognitive capacity that complement acquired solutions. It is concluded that high PA leads to positive outcomes but that it is not only positive outcomes that lead to high PA. Pressman and Cohen (2005) generally support these conclusions but discuss too the biopsychological processes concerning the influence of PA on health; this is achieved partially through health-endorsing behaviors like physical training, improved diet, lesser drug use, and better sleep habits and quality. Salvoey et al. (2000) imply that even though positive feelings may not last long they offer psychological resources that provide resilience, endurance and optimism which are long-lasting attributes that may be applied in forthcoming stressful situations.

Biopsychological notions of PA, NA and health

It has been shown, using functional magnetic resonance imaging, that high PA is associated with less mental effort and greater efficacy in neural processing of working memory in demanding tasks (Gray et al., 2005), implying a relationship between affect, cognition and brain functioning (Palomo et al., 2004). Individuals rating themselves higher on positive affect showed a relatively greater EEG response in the left midfrontal region of the cerebrum compared with individuals rating themselves higher on negative affect who showed more right-hemisphere activity (Tomarken et al., 1992).

Pressman and Cohen (2005) presented two models pertaining to how PA influences health: 1) The main (direct) effect model and 2) The stress-buffering model. 1) The main effect model is built on the notion that PA is a trait; reciprocal actions of health-endorsing behaviours, social contacts and biopsychological reactions (endogenous opioids), ANS and HPA activity leads to changes in immune and cardiovascular systems which in turn affect disorder development. 2) The stress-buffering model implies that there exists a direct influence of PA upon both the stress experience and immune and cardiovascular systems, endorphins, ANS and HPA activity, and the individual's health practices, all of which affect immune and cardiovascular systems in the long-term thereby influencing disorder development. Conversely, NA (expressed in depression, anxiety) directly influences immune system functioning through alterations in the secretion of proinflammatory cytokine, molecules signaling tissue-interference.

Chida & Steptoe (2008), in a meta-analysis review, found that psychological well-being was linked to reduced mortality in both healthy and unhealthy populations. They postulated that, after having controlled for NA, positive psychological well-being exerts a protective effect independent of NA and that both PA (positive mood, joy, happiness, vigor, energy) and positive trait-like dispositions (life satisfaction, hope, optimism, humor) were associated with reduced mortality among healthy populations.

PA and NA in relation to stress

Affective state, whether positive or negative, influences how stress is expressed (Melvin & Molloy, 2000). NA correlates strongly with stress and symptoms of stress (Pennebaker, 1982; Watson & Clark, 1984; Watson & Pennebaker, 1984). Individuals characterised by PA describe more social relationships, more satisfactory experiences with friends, are able to express greater organisational assertiveness and are described as happy, passionate, energetic and alert (Watson & Clark, 1984), whereas individuals characterised by NA experience greater stress and strain over circumstances viewed as beyond their control (Spector & O'Connell, 1994; Watson & Clark, 1984). Thus, both NA and PA influence individuals' relation to stressors, situations associated with stress and the stress experience itself (Aldwin, 1994; Melvin & Molloy, 2000).

Gender effects and affect

Karlsson and Archer (2007; 2008) found distinct gender effects in their studies of positive and negative affect and personality characteristics, health and stress. They found that

female participants expressed higher levels of responsibility and vigor, greater emotional coping and higher level of energy. On the other hand, female participants also expressed higher levels of negative affect, stress and Type A-personality. These findings are consistent with other findings showing that female participants display more negative health symptoms (Wilson et al., 2005; Linehan, 1973; Macintyre et al., 1996).

Affective Personality

In this context, Norlander, Bood and Archer (2002) have applied the notion of affective personality, incorporating different combinations of high and low PA and NA: individuals expressing high PA and low NA (“Self-fulfilling” individuals), individuals expressing high PA and high NA (“High affective” individuals), individuals expressing low PA and low NA (“Low affective” individuals), and individuals expressing low PA and high NA (“Self-destructive” individuals). Norlander et al. (2002) obtained a relationship between type of affective personality, blood pressure, optimism and cognitive performance under stress, Self-fulfilling individuals displayed the highest levels of performance. Subsequently, Bood, Archer and Norlander (2004) found that the Self-fulfilling individuals expressed less stress than the other three types of affective personality.

”What is stress?”

The soldier wounded in combat, the mother anxious for her soldier-son, the gambler at the races, the horse and jockey he wagers on: all these are under stress.

The hungry tiger, the glutton who overeats, the small shop owner worried about bankruptcy and the rich wholesale businessman striving for another million: they are also under stress.

The mother trying to protect her children from dangers, the child who bumps its head-particularly the skin cells exposed to hot coffee-they are also under stress. What is this mysterious entity the different humans have in common with animals, and even with single cells, at instants when much-much of anything-happens to them? What is the nature of stress?”

Hans Selye, 1958

Stress, health and immune function

The concept of stress emerged as early as 300 AD, as a notion implying hardship and privation. It is generally accepted that the term “stress” originated from physics during the seventeenth century, where the English inventor and naturalist, Robert Hooke (1635 – 1703), applied the concept to denote how much “stress” (pressure) that structures (e.g. buildings) could withstand (Cassidy, 1999).

Stress may be defined as a condition of imbalance between an individual’s experienced demands and his/her ability/resources to withstand them (Lazarus, 1990). Stress responses, orchestrated by physiological and biobehavioral brain processes that evaluate events, e.g. threatening, may be either adaptive or maladaptive (McEwen, 2007). Experienced stress activates a two-way communication system between the brain and cardiovascular system, and immune system via neuroendocrinal mechanisms (McEwen, 2007). In addition to the “fight-or-flight” response to acute stress, daily life situations exist that give rise to certain types of chronic stress that over time ‘wear out’ the body (allostatic load). Nevertheless, in the short-term adaptation and protection of the body is optimized by stress hormones, allostasis, (allostatic load). In the long-term, effective changes accrue to several brain regions, including hippocampus, amygdale and prefrontal cortex, that under the influence of stress undergo ‘remodelling’ that alters and influences the physiological responses (McEwen, 2007). Social and behavior-oriented interventions like physical activity and social support may reduce the stress burden and contribute to physical and psychological health in both brain and body, as well as increasing resilience (McEwen, 2007). McEwen (1998a) described four possible processes that have a psychological influence upon physiology and may lead to damaging health processes: 1) repeated ”hits” by novel stressors; 2) lack of adaptation to the same stressor; 3) failure to shut off physiological responses following exposure to a stressor and 4) inadequate responses to stressors.

Allostasis is a fundamental process with the objective of maintaining stability under changing circumstance that implies morphological, physiological and behavioural adaptations (McEwen & Wingfield, 2003). Allostatic load, refers to the accumulated ‘price’ that the body must ‘pay’ during allostasis whereas Allostatic overload refers to the marked pathophysiology that occurs during long-lasting AL. According to the notion of allostasis based on the balance between energy input and energy use, there appear to be two types of allostatic overload: 1) ”allostatic overload occurs when energy demand exceeds supply, resulting in activation of the emergency life history stage. This serves to direct animal away from normal life history stage into a survival mode that decrease allostatic load and regains positive energy balance. The

normal life cycle can be resumed when the perturbation passes” (McEwen & Wingfield, 2003, pp. 4); 2) “allostatic overload begins when there is sufficient or even excess energy consumption accompanied by social conflict and other types of social dysfunction. The latter is the case in human society and certain situations affecting animals in captivity”. The “type 2 allostatic overload does not trigger an escape response, and can only be counteracted through learning and changes in the social structure” (McEwen & Wingfield, 2003, pp. 4). When allostatic overload occurs it is accompanied by marked changes in glucocorticosteroids, ANS functioning, CNS neurotransmitters and inflammatory cytokines (McEwen & Wingfield, 2003). Allostatic load offers a multisystem approach describing how daily stress may be related to health and disease by focusing upon individuals’ experience of challenging events and their biological reactions, not least the ongoing bodily processes maintaining stability under conditions of acute and chronic stress, respectively (McEwen, 2007, 1998a; McEwen & Stellar, 1993). Allostatic load and increased health risk are hypothesized to include repeated exposure to stressful situations without sufficient rest and recovery, and inability to relax after work. High AL elevates the risk for future illhealth (Seeman et al., 2001). According to McEwen and Wingfield (2003), the notion of stress may be summarized as a process through which physiological stability is maintained under changing situations and environmental disturbances leading to AL.

The National Institute for Occupational Safety and Health (NIOSH, USA) has reported (Publication No. 99-101, pp. 1): “The nature of work is changing at whirlwind speed. Perhaps now more than ever before, job stress poses a threat to the health of workers and, in turn the health of organizations.” Over the last century, there seems increasing illhealth pertaining what is referred to as exhaustion syndrome and burnout, formerly referred to as neurasthenia. The change from industrial to communications society, presupposes a mode of accelerating change in communication systems concurrently with a culture evermore defined by competition, performance and demand that has resulted in a high tempo (Johannisson, 2006; van Geelen et al., 2007). Throughout, it has been postulated that individuals compensated for job demands with a hectic pleasures, experiences and journeys rather than rest and recuperation: yet enhancing social pressures on the individual (Johannisson, 2006).

Stressful situations in daily life, e.g. work-related, partner-related and/or family-related, effects of leadership or interpersonal problems may cause psychological (e.g. depression, anxiety, sleep problems, fatigue) and somatic (e.g. muscle and headaches, cardiac or respiratory problems, alimentary canal problems, etc) conditions as well as changes in immune function. The WHO writes (2008-11-05) “Depression is a common mental disorder

that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration”. Furthermore, “Depression is the leading cause of disability as measured by YLDs (Years Lived with Disability) and the 4th leading contributor to the global burden of disease measured by DALYs (Disability Adjusted Life-Years) in 2000. By the year 2020, depression is projected to reach 2nd place of the ranking of DALYs calculated for all ages, both sexes. Today, depression is already the 2nd cause of DALYs in the age category 15-44 years for both sexes combined.” Takeuchi et al. (2008), in a longitudinal study, found that somatic symptoms, including sleep disturbance and fatigue, to be more stable than psychological symptoms. They found that early somatic symptoms, sleep disturbance, constipation and fatigue and psychological symptoms, confusion, psychomotor agitation and irritability, were associated with depressive states. It appears that even daily hassles and uplifts of lesser consequence than major life events, predict concurrent and subcurrent psychological symptoms (Kanner et al., 1980). It has been found that short-term as well as chronic stress influences immune function. Stone et al. (1994) points to associations between mood and immune defense. Kiecolt-Glaser et al. (2002) has indicated that wounds heal 40% slower if individuals are exposed to stress (e.g. exam stress) relative to whether they are in a more relaxed condition (e.g. summer vacation). Miller et al. (2004) indicated that individuals under stress produced fewer antibodies at a slower rate and had fewer antibodies left after 4-months follow-up. Moreover, levels of growth hormone are found to be linked to immune defense: Release of growth hormone has been coupled to sleep and since it often disturbed during distress the release of the hormone is influenced (Kiecolt-Glaser et al., 2002). All alterations to the immune defense system open avenues for bacterial and/or viral infections.

Gender differences

Lundberg (2005) discusses stress hormones and health from a perspective of biological stress responses implying the similarity of reactions. Nevertheless, research indicates systematic differences between the genders: in laboratory-induced performance stress, male participants increased their adrenaline response significantly, about 50-100%, whereas the female participants showed little or no increase, despite performing as well or better. Women with a ‘male-dominated’ education and women and men at the same occupational level showed similar adrenaline responses as their male colleagues. Furthermore, estrogen-replacement therapy and high testosterone levels did not affect the women’s adrenaline output

during stress. This implies that gender roles and psychological factors rather than biological factors underlie womens' adrenaline response.

Coping resources and stress

Adversity and stressful situations occur daily in work life. Resilience is related to individuals' ability to adapt to these adversities (Jackson et al., 2007). Resilience may be defined as an individual's capacity to emerge, in a positive manner, from negative, traumatic or stressful experiences and function with a buffering capacity against forthcoming adversities. Everyone possesses some form of potential for resilience that is related to individual's ability to balance risk factors with protective factors. Protective factors facilitate the achievement of positive effects despite risk (Tugade & Fredrickson, 2007). Individuals expressing high resilience, in contrast to those expressing low resilience, perceive stressful situations as less threatening in accordance with their cognitive appraisals with consequent physiological reactions to the situation (Tugade & Fredrickson, 2007). Nevertheless, the distinction between resilience and recovery is critical: the requirement for recovery presupposes that normal functioning has been disturbed under the prevailing stress conditions whereas resilience implies that one maintains equilibrium without compromising normal functioning (Bonanno, 2004). Polk (1997) describes four patterns of resilience: 1) dispositional pattern, which encompasses psychological attributes; 2) relational pattern, which refers to intrinsic and extrinsic roles and relations; 3) situational patterns, which captures the ability people have to assess and react to stressors or situations of adversity; 4) philosophical pattern, which includes personal beliefs and principles. Here, it is implied that strategies associated with problem-solving are essential to the individual's survival. Several factors elevate resilience, including self-enhancement, positive feelings, laughter, ability to interpret events positively, ability to suppress negative feelings (Tugade & Fredrickson, 2004). Positive feelings facilitate recovery from negative feelings and reinforce resilience, thereby allowing the acquisition of greater resources to heighten personal resilience; much of this progression is captured by the notion of 'empowerment' (cf. Archer et al., 2008). Furthermore, this progression of resilience may broaden and increase the individual's store of thought-action processes thereby increasing the variation and frequency of thoughts and actions available for dealing with future adversity (Fredrickson, 2004). Moreover, individuals expressing low resilience may change: through empowerment conditioning they may acquire cognitive and behavioral attributes that promote new positive appraisals and an attributional style allowing them to increase psychological resilience (Tugade & Fredrickson, 2004). Even if low and high

resilient individuals report equally high levels of frustration to serious problems, the high resilience individuals concurrently report high levels of positive emotions. The latter are associated with words like eagerness, excitement, happiness, and interest even when they find themselves in adversity experience high levels of frustration (Tugade & Fredrickson, 2004). This possibility provides a positive upward-moving spiral wherein positive emotions may result in positive “meaning finding”, which in turn results in the elevated experience of positive emotions and so on (Fredrickson & Joiner, 2002).

Coping resources and ‘hardiness’ are considered to influence individuals’ experiences of stress (Contrada, 1989; Low, 1999; Wiebe, 1991). Hardiness, consisting of the elements, challenge, commitment and control, imparts the ability to view situations as opportunities for personal development, the conviction of purposefulness and meaning and confidence in one’s own ability to influence outcome (Kobasa, 1982; Steinhardt et al., 2003). Individuals possessing ‘Hardiness’ experience change as a challenge, are committed to persons, activities and situations that they are involved with and show personal control and direct life events thereby strongly influencing their ability to cope with stressful situations (Steinhardt et al., 2003). Coping resources pertain to the strategies that facilitate dealing with stress incumbent to different individuals (Auerbach & Grambling, 1998). Lazarus and Folkman (1984) have discussed two types of coping: problem-focussed and emotion-focussed. The former is focussed on problem-solving and by the circumstances leading to stress whereas the latter presupposes the regulation of emotions and their expression. Both coping strategies influence individuals’ appraisals of situations thereby modulating the intensity and behaviour with which individuals react to stress (Lazarus, 1990). Craver, Scheier and Weintraub (1989) studied several coping strategies, including avoidance, search for social support and cognitive behaviour; Watson and Walker (1996) found that the relationship between individual characteristics and type of coping strategy was relatively stable over time. Nevertheless, Norlander, Bergman and Archer (2002), in a sub-longitudinal study, showed that coping strategies were alterable following a 12-month period of physical, mental and speech training. One consequence being that these individuals dealt with stressful situations more effectively thereby reducing negative stress reactions.

Work-related stress

Work and occupation in the industrial society is an important factor linked to psychological health. There is a consensus that work is coupled to a greater socioeconomical

perspective with increased affluence. It may even bestow upon individuals substance for personal satisfaction and accomplishment (Blustein, 2008).

Despite the variation in events experienced as stressful, the workplace and marital relations are commonly the most often reported sources of stress (Barnett, Steptoe, & Gareis, 2005). Lazarus (1991) presents the notion of stress at work as a transaction process between individual and work environment whereby stress-inducing situations ('stressors'), cognitive appraisals ('threats/benign') and resources are distinguished. Resource paucity to cope with threat induces affective reactions (ibid). Work-related stress is linked also to the individual's role identity whereby the work-related role is one of two, besides the family-related, roles which offer core components in the adult identity. Impediments to this role-related identity formation and maintenance are likely to be experienced as stressful.

The experience of work-related fatigue emerges primarily after a day's work. This is not necessarily a problem as long as there exist opportunities for sufficient recovery between two work periods (Sluiter et al., 2001).

Work related stress, Models and theories

The existing literature indicates several models pertaining to the relation between work, stress and illhealth. Amongst these models may be highlighted: 1) most common is the demand-control model by Karasek (1979), later developed further with the social support factor by Karasek and Theorell (1990). 2) The model, person-environment fit, focuses on the relation between these factors and the degree to which the employee's capabilities, needs and expectancies answer to the employer's demands and requirements (Caplan 1987). 3) A later model by Siegrist (1996) points to the imbalance experienced by employees between high work load and low reward, bleak opportunities for promotion and job insecurity. 4) In addition, Meijman and Mulder's (1998) effort-recovery model which implies that workload in itself is not a work-stressor but that work demands defined by high effort expenditure leads to psychological load reactions which, particularly in cases of incomplete recovery, reduce well-being and elevate negative health effects. 5) Helland Hammer et al. (2004) present a model that argues for a focus upon the nature and quality of workplace norms. They imply that the psychosocial work environment consists of formal and informal norms which steer the relations of the members of an organisation to each other and to the organisation itself; these norms influence their job-related attitudes and behaviour (Ilies et al., 2007).

Job stress has negative effects on the health of all workers but there is a difference connected with individual characteristics. As many job stress studies have shown that the

relationship between a certain job stressor and a certain job strain occurs in employees with particular dispositional characteristics (Le Blanc et al., 2000). When it comes to individual differences and work stress, researchers in within the field of work and organizational psychology are naturally most interested in individual difference variables that are work-related and how these variables can explain variances in health outcomes. Three categories of individual difference variables have been classified 1) Genetic characteristics, 2) Acquired characteristics, 3) Dispositional characteristics (Le Blanc et al., 2000).

Leadership support and work group, workplace social support, unity influence the experience of stress in the workplace (Steinhardt et al., 2003). Four definitions of workplace support are frequently accepted by researchers in the area of work stress: 1) social integration, 2) satisfying relationships, 3) perceived available support, and 4) actually received support. There is also a distinction that is usually made between four types of social support: 1) emotional support, 2) instrumental support, 3) informational support, and 4) appraisal support. Social support is looked upon as having buffering effects and thereby alleviates the impact of job stressors on stress reactions and in that way having a positive effect when strong job stressors are involved (Le Blanc et al., 2000).

Work related stress, Interventions

Organizational based interventions are primarily aimed at improving efficiency or effectiveness so reduction of job stress is mere a by-product in these cases. The focus of job stress interventions are often on three levels: 1) the organization, 2) the individual-organization interface and 3) on the individual. The interventions serve different purposes firstly to identify job stressors and stress reactions. The primary prevention is focused on reduction of job stressors while the secondary prevention is helping the employees to find altering ways to respond to job stressors. After that, the treatment process starts with focus on healing those who suffer severely from job stress. If the employee have been away from the workplace rehabilitation and the planning of return to previous job takes place (Le Blanc et al., 2000).

A recent intervention study by Schaer et al., (2008) that focused upon partner relationship coping indicated that increased coping strategies within partner relations provided marked effects that were reflected also in health aspects (e.g. burnout) that often complicate the stress situations at work. These effects were not only greater in relation to the control group but also in relation to individuals that had received individual intervention directed

towards coping reinforcement. This result indicates that cross-over effects between work and family could be reduced with partner-related interventions.



Recovery

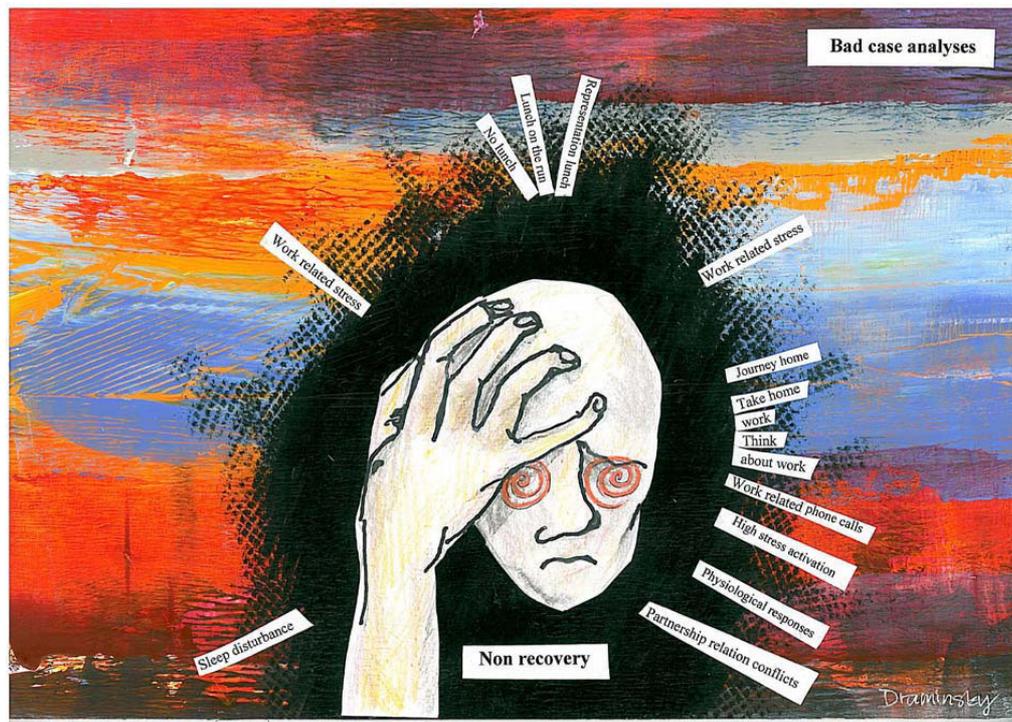
The purpose of recovery is to maintain the balance between the deteriorative (e.g. catabolic) and recovery (e.g. anabolic) processes. The recovery and reconstructive processes promote growth, development and reparation as well as rejuvenating energy stores. It is during recovery that individuals sleep, rest, perform different “off-regular” activities and think ‘freely’. Rest and recovery are essential for the allostatic load model, earlier described as “Stress, health and immunefunction”, (McEwen, 1998a; 1998b; McEwen & Stellar, 1993). Recurrent and/or long-term stress activation of physiological systems in the absence of rest and recovery accumulates together with daily ‘wear-and-tear’ of bodily resources elevates risk of a variety of health problems (McEwen, 1998a; 1998b). von Theile et al. (2006) indicated that insufficient recovery from the workplace is associated with elevated risk of allostatic load. They discuss various possibilities regarding different recovery profiles that relate to personal types of recovery rather than levels of recovery. There are two hypotheses regarding recovery types: 1) certain reaction patterns linked to sleep problems and tiredness with increased risk of higher degrees of allostatic load, 2) differences in intensity and/or duration

of exposure to work stress with individuals locked into different stages of “recovery-insufficiency”.

Consequently, recovery remains an essential context surrounding work-related stress and associated pressures (Sonnentag et al., 2008). Recovery occurs during periods when individuals are free from work-linked demands (Meijman & Mulder, 1998) or on those occasions when new energy or the feeling of control is created (Hobfoll, 1998), and may be related to positive experiences and affect (Sonnentag et al., 2008). Lack of rest and recovery from work has negative effects on health and well-being (Sluiter et al., 1999; Sonnentag & Fritz, 2006). Recovery occurs generally during work pauses (e.g. coffee breaks), evenings after work, weekends, and holidays, and is linked to detachment from work, relaxation and experience of mastery (Sonnentag et al., 2008). “Recovery-insufficiency” pertains to a negative influence both on well-being and performance at work. The experienced necessity for recovery implies that employees are under appreciable levels of strain during the working day due to dealing with work demands (Demerouti et al., 2007). Hobfoll (1989, 2002) implies that if an individual fails to acquire new resources after having depleted resources during the work-day, stress occurs. Grandey and Cropanzano (1999) confirm these notions by showing that the long-term influence of work-related or family-related stressors depletes individual resources, of increased stress reactions, work/family dissatisfaction, life distress and detrimental physical health. Furthermore, employees occupied with work-related activities during evenings (“off-work”) and other non-working hours report higher levels of strain when they go to bed than those spending “off-work” hours engaged in social activities, physical activities, watching TV or taking a bath (Sonnentag, 2001). Rothbard (2001) implies that when experience of stress at home affects work performance negatively one attempts to cope with the situation by trying to deal with the negative feelings, a process requiring energy depletion with eventual fatigue. This situation results in employees’ reduced capacity for information processing and ability to perform tasks (Sonnentag, 2001), as general fatigue is associated with reduced attention span and concentration (Van der Linden et al., 2005; Van Duinen et al., 2005). Gustafsson et al. (2008) showed that insufficient or unsatisfactory rest and recovery are linked also to higher levels of cortisol during the morning hours. Lack of recovery is a key factor involved in the elevated stress-related health problems in industrial countries, over both genders (McEwen, 1998a, 1998b; Sluiter et al., 2001).

Sluiter et al. (2001) draw attention to the “vicious circle” resulting from repetitive recovery-insufficiency due to neuroendocrine (hyper)reactivity. This notion implies that recovery-insufficiency requires extra effort at the start of each workday to ‘redress the

balance' to compensate for the suboptimal psychophysiological condition of sustained activation and to counteract performance breakdown. The authors suggest that even when individuals are exposed to mild stressors at work, without possibilities for recovery, a “vicious circle” is activated.



Partnership relation and work

Married and co-habiting couples possess unique means of influencing the employed individual, outside the working hours and situation, through offering both emotional and practical support. Outside the workplace this partner support has been shown to influence work satisfaction (Brough et al., 2005). Ford et al., (2007) have presented a meta-analysis demonstrating cross-domain relations, defining it as a concept originating from the extent to which a special factor in the work area, work domain, may be related to satisfaction in the family area, family domain, and *vice versa*. Three key types of association have been shown to reflect the work and family areas: *time-based pressure*, e.g. when physical/mental presence in a domain carries difficulties in fulfilling role responsibility in another domain; *strain*, e.g. factors causing stress or tension; and *behavioral incompatibilities*, e.g. when a desired behavior in one domain aggravates demands and requires a different role (Ford et al., 2007). Their meta-analysis indicated that stressors and support specific to one area (e.g. work or family) may relate to satisfaction outside that area. Furthermore, work-related stress was most

strongly related to work-family interface and that family-related stress was most strongly correlated to work satisfaction. Support from family or work provided influence upon satisfaction in the opposite domain. It was shown earlier that gender differences were not forthcoming in their meta-analysis by which the authors imply that gender roles in the family and at work develop an overlapping tendency. Concomitant studies focussed on work-related stress present a similar association of stress in the work environment implicated in physical and psychological illhealth (Jex, 1998; Warr, 1999; Cooper, 2001; Cooper et al., 2001; Hart, & Cooper, 2001; Melamed et al., 2006).

”Divorce follows ninth of marriages
About one marriage in every nine is terminated by
divorce....number of divorces granted in 1916 ...112 per
100 000 of population, as against 84 in 1906, 73 in
1900and 53 in 1890.
The principal causes for divorcewere: desertion, 36.8
per cent.; cruelty, 28.3 per cent.; infidelity, 17.5 per
cent.;...”
The New York Times Mars 21, 1919

Partnership relation

Research often seeks to observe the core of problematic relationships in order to ascertain what went wrong and how to be able to set things right. However, when one has set out to explore partnership relation quality one has first to define the key to the relationship. Which factors are building a relationship and which factors are maintaining them? Sternberg (1986) presented a theory regarding this matter in his article “A triangular theory of love”. According to Sternberg, love, or partnership relation, is formed by three components: *intimacy*, *passion*, and *decision/commitment*. Intimacy can be looked upon as the “warm” component engaging emotional investments and encompasses closeness, contentedness, and bondedness. The “hot” component, passion, is connected to motivation and arousal, and encompasses the drives that lead to romance, physical attraction, and sexual intimacy. On the other hand, the “cold”, decision/commitment component is connected with love in short and long terms. In the short term, we “make a decision” to love someone, but in the long term we make a commitment to stay and maintain that love, which implies more of a cognitive engaging component. According to Sternberg, the intimacy component seems to be the core of a loving relationship while the decision/commitment component may be the component that cements the relationship together through the ups and downs that every long term

relationship experiences. All three of these components are included in what Sternberg regards as a complete love, a love many of us would like to be engaged in. Nevertheless, the existence of the three components may differ and vary in importance within different relationships. Additionally, Henderick and Henderick (1990) found that passionate and compassionate love was highly valued among long term relationships. Moreover, Marston et al. (1987) found that communication and communication strategies, in a broader sense, were connected with the experience of romantic love. This implies that not just the verbal communication, such as the expression “I love you”, but also smiling, touching and spending time together will communicate love from one partner to the other one. Hendrick (1988) also found that couples that were engaged in a long term relationship were erotic, disclosing, had higher self-esteem, were committed and invested in the relationship. To summarize, the manner in which we interact with one another through communication and what and how we invest in the relationship determines the quality of a long term relationship.

Partnership relations and partnership relation quality research emerges in 1924 with Davis and Hamilton’s studies (Terman, 1938), published in 1929. A decade later, Terman and co-workers published investigations on factors predicting marital happiness. Good partner relations of high quality may be associated with security, closeness, intimacy and positive emotions whereas partner relations of lesser quality are associated with vigilance, hyperarousal, avoidance conflict and negative emotions. Good partner relations reduce the physiological response to stress by providing the feeling of security and belongingness that is health-promoting (Troxel et al., 2007). An important factor determining degree of satisfaction in the relationship is communication. Patterns of communication that provide high levels of relationship satisfaction are described by the prerequisite that the partners do not avoid discussing problems in the relationship but do so in a constructive manner (Smith et al., 2008).

Partnership relation quality (measured by marital happiness) has been shown to be associated with life happiness as indexed over time, whereby high levels of partnership relation quality predicted a more constant and higher level of life happiness whereas low partnership relation quality predicted a low and deteriorating level of life happiness (Kamp Dush et al., 2008). Taken over time, depressive symptoms decrease in individuals with high to middle partnership relation quality but not in individuals described by low partnership relation quality, implying clear psychological advantages of the former.

Equality in the relationship is another factor contributing to happy marital or relational status. Male partners who share in the housework and offer equality in decision-making

ensure a greater probability of happier marriage (Kamp Dush et al., 2008). Equity theory implies that fairness in intimate relationships produces greater intimacy, more stability and higher experienced quality (Walster et al., 1973; Utne et al., 1984), as well as better marital adjustment (Davidsson, 1984).

Partnership relation and stress

Several studies implicate marital relations in the experience of stress (Balog et al., 2003; Barnett, Steptoe, & Gareis, 2005; Blom et al., 2003), whereby marital problems are associated with highly stressful experiences and depressive symptoms. Carels et al. (1998) exposed career women to laboratory stress situations wherein they were required to recall: a marital conflict, a work place conflict and a series of mathematic subtractions, and found that only the marital conflict increased blood pressure. Barnett et al. (2005) showed an association between marital quality and stress markers whereby individuals with marital problems estimated higher stress levels and diastolic blood pressure over the 24-hour period with salivary cortisol levels showing a lower, flatter curve, indicating that both genders reporting marital conflict reported too higher stress throughout the day. Poor marital quality or partner relationship seems to induce lasting distress increasing risk for affective disorder.

Researchers within the work-family domain have found that non-work-related problems and/or other family-related stressors may interfere with work and reduce performance (Charles et al., 2004; Netemeyer et al., 2005; Shellenback, 2004). Tense relationships in the home-domain encroach upon and interfere with participation in the work-domain (Carlsson et al., 2000). On the other hand, lesser yet chronic stress, originating outside the relationship, increases the risk of tensions and conflicts in the relationship. These lesser yet repeated stresses undermine the relationship by slowly but surely eroding relationship quality (Bodenmann et al., 2007). Stress process theory implies that chronic effort in social key roles such as marriage, parenthood, or work may cause stress that is manifested in psychological distress (Pearlin et al., 1981). Additionally, social support by itself appears not to reduce psychological stress but together with secure attachment levels of anxiety due to stress exposure are reduced (Ditzen et al., 2008).

Partnership relation and communication

Research shows a strong association between relationship satisfaction, commitment, intimacy and communication (Boland & Follingstad, 1987; Dyer & Halford, 1998; Moore et al., 2001; Sprecher et al., 1995). Communication does not just express feelings, wills and

desires but also provides each partner with either positive or negative feedback. Thus, communication empowers or disempowers the opposite partner. With adequate communication skills of good quality the development of both partners will be facilitated thereby ensuring dyadic satisfaction and affection (Moore et al., 2001; Rosen & Leiblum, 1995; Singer-Kaplan, 1995).

Use of negative verbal or nonverbal communication during marital problem-solving by partners leads directly to negative influences on health-related factors, e.g. immune defence (Burman & Margolin, 1992; Kiecolt-Glaser & Newton, 2001). Negative communication is associated with negative (problematic) autonomic, endocrine, and immune alterations lasting over short periods following completion of the task/job (Burman & Margolin, 1992; Kiecolt-Glaser & Newton, 2001; Robles & Kiecolt-Glaser, 2003). Negative discussions, independent of gender, initiated elevations in systolic blood pressure, heart rate, and cardiac output and greater pre-ejaculation period (Nealey-Moore et al., 2007).

Partnership relation, health and illhealth

A currently-held belief is that marriage promotes health and that single individuals are at greater risk for illhealth than married/common-law couples. This belief is supported by research showing that marital/partnership relations, under some conditions, may generate positive health effects for both men and women (Rook, 1998; Light et al., 2005). This association between marital quality and health originates in marital couples possessing similar health behaviour, e.g. daily routines, social control of health behaviours (Troxel et al., 2007). Epidemiological studies indicate that social isolation increases morbidity risk and mortality linked to health risk factors such as smoking, high blood pressure and overweight (House et al., 1988).

Marital conflicts lead to increased depression and functional impairment and involve a significant risk for psychological and physical health (Choi & Marks, 2008). Several biopsychological laboratory studies have shown that poor marital quality leads to reduced psychological health. Poor marital quality is associated also with negative physical health effects, like functional impairment, and lower self-estimated health (Bookwala, 2005; Hawkins & Booth, 2005). Robles and Keicolt-Glaser (2003) indicate several factors linking partner relations quality and health, implying that marital status may in several respects protect against mortality: higher for men (250 %) than for women (50 %), and explained by the stress/social support hypothesis. High marital quality is linked to fewer reported illness symptoms that are reduced by improvements in marital quality (Robles & Keicolt-Glaser,

2003). In contrast, marital stress doubles the risk for coronary relapse in comparison with work-related stress (Robles & Keicolt-Glaser, 2003). Intimate relations indirectly influence illness processes/outcomes through mood changes and influencing health-affecting habits (Robles & Keicolt-Glaser, 2003). Marital conflicts are viewed as a primary source of marital distress and are associated with psychological distress and depressive symptoms, as well as health deterioration indexed by symptomatology, extent of recuperation, self-reports and pain (Robles & Keicolt-Glaser, 2003). Excessive cardiovascular reactivity to stress, a risk factor for hypertension and vascular disease, the reactivity hypothesis, applies particularly to frequent and intensive reactions (Robles & Keicolt-Glaser, 2003). Marital conflicts are linked to elevated blood pressure and pulse. Catecholamines och glucocorticoids, with influence on social relations and homeostatic processes (including metabolism and stress responses), regulate cardiovascular, metabolic and immune functions (Robles & Keicolt-Glaser, 2003). Marital conflicts affect the endocrine system up to 24 hours after the conflict. Up to 15 min. after a conflict, partners in negative conflict behavior indicated increased levels of adrenaline, noradrenaline, adrenocorticotrophic hormone and growth hormone and reduced levels of prolactin (Robles and Keicolt-Glaser, 2003). Women, whose men showed withdrawal response to women's negative behavior showed increased noradrenaline and cortisol over 24 hours (Robles & Keicolt-Glaser, 2003). There is a general association between hostile behavior and the immune defense system, as evidenced by reduced levels of natural killer cells and increased antibody titers: effects stronger for women than men. Unsurprisingly, marital conflicts may lead directly to depressive symptoms and functional health limitations (Choi & Marks, 2008).

Partnership relation and life satisfaction

Involvement in a partnership relation has been found to exert a strong influence upon how individuals experience the global aspects of life satisfaction (Vendtgodt, 1998). Maslow (1962 a, 1962b) postulated that each human being possesses the need for 'loving' and 'to be loved'. The capacity to develop a loving relationship, characterised by intimacy and respect, remains a basic prerequisite for individual satisfaction, according to Maslow. This contention is supported by Forrester (1980) who indicates that what most strongly predicts individual life satisfaction is involvement in a partnership relation based upon love. Thus, individuals involved in a well-functioning partner relationship report higher levels of life satisfaction and lower levels of neuroticism (Bee, 1988). Nevertheless, it must be considered too that not only partnership but the quality of the relationship is important. Accordingly, partnership relation

quality may function as buffer against stressful events (Troxel et al., 2005), through (i) protecting against risks associated with social isolation (Wickrama et al., 1997; Berkman & Glass, 2000); (ii) exerting an indirect influence on health via increased socioeconomic resources (Johnson et al., 2000); (iii) optimising health-related behaviours that thereby reduce health-destructive behaviours (Rook, 1990; Umberson, 1992).

According to Prolux et al. (2007), two main models are coupled to marital quality and well-being: 1) the stress generation model, and 2) the marital discord model of depression. The stress generation model implies that individuals with low psychological well-being are exposed to or create stressful interactions with their partners thereby further reducing well-being. The marital discord model of depression implies that low marital quality increases depression risk since unhappy marriages lack partner support concurrent with the hostile and stressful environment, linked to an unhappy marriage, increases risk for lower level of well-being (Prolux et al., 2007).

Partnership relation quality and psychological illhealth

Research concerning the psychological consequences of partnership relation problems appears limited although there are findings pertaining to the psychobiological consequences of problems arising in PR. For example, qualitatively worse partnership relations are associated with a greater incidence of depressive symptoms, increased worry, etc (Balog et al., 2003), as well as increased anxiety (Gallo et al., 2003). Whisman et al. (1999) found that co-habiting partnership dissatisfaction was associated with almost 70 % of disorders assessed by the Ontario Health Survey Mental Health Supplement (including those connected with anxiety and depression). Concomitantly, partnership relation defined by high levels of partner support are associated with low levels of psychological distress (Glenn & Weaver, 1981; Merikangas et al., 1985). Fincham and Bradbury (1993) found that high levels of depressive symptoms were counter-related to partnership relation satisfaction while self-confidence was positively related to partnership relation satisfaction over both genders. After controlling for work-related stress, Blom et al., (2003) showed that partnership relation stress was linked to lower social integration, degree of experienced support, degree of belongingness and degree of actual support whereas, after controlling for partnership relation stress, work-related stress did not exert the same influence.

It seems likely that poor quality of partnership relations is implicated in a long-lasting, elevated risk for distress underlying a wide variety of psychosomatic disorder profiles.

“The omnipresent process of sex, as it is woven into the whole texture of our man’s and woman’s body, is the pattern of all the processes of our life”

Havelock Ellis 1890.

(Geer & Manguno-Mire, 1996).

Sexuality

“Sexuality is a central aspect of being human throughout life and encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious and spiritual factors” (WHO homepage internet 2008-11-05).

Both psychological stress and physiological health are associated with sexual problems (Rosen, 2002). Depressive conditions are commonly associated with sexual problems, often masked by the label mood disorders. Further, many patients have problems recounting sexual problems with their physicians. Antidepressant compounds complicate issues regarding depressive symptoms and sexual dysfunction since they may contribute to cause (Rothschild, 2001). Sexual problems and dysfunction are correlated to cardiovascular disorders, diabetes, negative health behavior and mental health (anxiety and depression). A functional sexual life contributes to personal well-being and stability in a relationship, a relationship stronger for men and women (Heiman, 2002). Sexual satisfaction in turn is associated with partnership relation satisfaction. Fatigue reduces sexual satisfaction while positive subjective health and co-existence increase it (Beutel et al., 2002).

Lack of sexual desire is more commonly found among women (Træn et al., 2007). Couples reported that the most usual problems with sexual desire were related to stress, illness or other factors. Reduced ability to sexual arousal was the best predictor of reduced desire for both men and women. For the latter, negative work-to-home interference was associated with a distressing loss of sexual desire. Work and domestic stress most commonly reduced desire.

Poor communication regarding questions about sex, e.g. regarding what was experienced enjoyable, etc, predicted general reduction in sexual desire among men (Træn et al., 2007). Total work burden and fatigue influenced sexual desire. Reduced desire and sleep problems are linked to small children in the family. On the other hand, constructive conflict communication correlated negatively with depressive symptoms and positively with marital adjustment (Heene, et al., 2007).

Sexual satisfaction

Sexual satisfaction is associated with stability in relations (Sprecher, 2002). Men have an earlier link between sexual satisfaction and partnership relation quality than women (Sprecher, 2002). Both women and men considered that sex was essential for good partner relations (Elliott & Umberson, 2008).

Sexual satisfaction over time, both for men and women, influences increased partnership relation quality and reduces partnership relation instability on later occasions (Yeh et al., 2006). Partners experiencing high levels of stress within the relationship tend to experience less sexual satisfaction and activity and higher levels of sexual dysfunction; this situation exists even for the other partner despite any lack of dysfunction in this partner. Surprisingly, Bodenmann et al. (2007) showed that men reporting repeated external daily hassles also reported more marital satisfaction and more sexual activity. Under the elevated influence of external stress, e.g. work-related stress, there is the risk that factors, such as partner's various goals, different needs and disturbing habits, become harmful to the relationship whereas when work-related stress decreases these relation-related factors become less noticeable there allowing relationship functioning to improve (Bodenmann et al., 2007).

Sexuality and stress

Herbert (1993) has presented a comprehensive review, "Sexuality, stress and the chemical architecture of the brain", concerning associations between stress and sexual function. Much of the research on sexual behavior and stress has been performed in the animal laboratory which implies the conclusions are tenuous. Stress appear to affect sexual behavior through increased/decreased release of neurohumoral agents that modulate the neuronal circuits involved. Nevertheless, associations with limbic structures are central to both sexual and emotional expressions. Limbic regions appear involved in adaptation and homeostasis, which includes detection and response to demands and needs from both sensory and endocrine environments (Herbert, 1993). The external, sensory influence is processed in

the cortex and reaches the limbic system via the amygdala. On the other hand, the endocrine influence involves chemical coding through an interaction of peptides and gonadal steroids, shaping behavior, thereby regulating individuals' exposure to amongst other things, stress. Limbic processes, in complex multi-interactions with other brain regions, may be said to direct particular patterns of neurochemical activity. Herbert implies that sexual activity ought not just to be characterized as behavior expressions but also in the enormous alterations at neurohumoral levels and automatic processes, such as erection and cardiovascular activations. Limbic involvement implicates neuropeptides and a variety of monoamines and steroids, "a concatenation of electrochemical orchestration". The hypothalamus plays an important role in the hormone-dependent phase of sexual performance. The amygdala is involved in the processing of sensory information, that is sent onto other limbic structures, and appears involved in earlier parts of intercourse (as construed from animal laboratory studies). Oxytocin, another peptide related to sexual behavior, has been associated with women and motherhood, although results have linked it to sexual behavior of both genders and particularly to social bonding. β -endorphins are found in the hypothalamus and brain stem (as well as in regions of the mesolimbic system), and levels in blood and brain are elevated during stress thereby reducing reproduction and reproductive activity and luteinizing hormone release. During high levels of stress, β -endorphins reduce levels of testosterone (cf. Ursin et al., 1978) and affect direct effects on behavior. Changes in biogenic amines, dopamine, noradrenaline and serotonin may influence the expressions of sexual behaviour too. Increased dopamine levels increases the sexual response. Reduced serotonin activity increases sexual behavior whereas serotonin agonists reduce it. High levels of stress in men reduce testosterone levels. Reproduction is highly sensitive to social stress and the influence of stress on reproduction consists of sexual behavior and neuroendocrine mechanisms.

Corticotrophin-releasing factor is associated strongly with stress-related conditions, e.g. anxiety, depression and inflammatory diseases (Dautzenberg & Hauger, 2002), but also to reduced sexual behavior. Monoamines too influence variations in sexual behavior. Reduced testosterone levels in men influence sexuality, e.g. sexual interest (Bancroft, 2005).

Contrary to what was expected with regard to the above shown effects of stress upon sexuality, Morkoff and Gilliland (1993), found that the desired frequency of sexual intercourse increased with daily hassles for both husbands and wives. Consistent with this, McCarthy (2003) found that sexual activity often may serve to reduce tension as couples are exposed to stressors in every day life.

Purpose

The purpose of Study I and Study II, Article I, was to examine the contribution of type of affective personality to several life events confronting individuals at work, socially and in the domestic context. The possible role of gender was considered of some importance, since gender differences are enhanced by stress (Schulz et. al., 2004).

The purpose of Study I (hereby termed study III of the dissertation), Article II, was to determine the effect of PRQ and JSS in health and illhealth. Here, health was measured by positive affect, energy, dispositional optimism and illhealth by depression, anxiety, stress, psychological and somatic subjective stress experience and negative affect.

The purpose of Study I (hereby termed study IV of the dissertation), Article III, was to examine the association between quality of partner relationship, work-related stress and factors indicative of illhealth upon the different genders. It was hypothesised that PRQ ought to influence self-reported negative health effects (e.g. stress) whereby higher levels of PRQ are associated with lesser consequences of work-related stress upon health status.

The purpose of Study I (hereby termed study V of the dissertation), Article IV, was to examine whether or not the presence of positive qualities from sexuality may provide a positive buffer against negative affective states or tendencies toward illhealth that may be generated by stress at the work place. The presence of gender effects and which particular sex-related factors linked to “sexual life satisfaction” in male and female participants were also investigated.

Methods and materials

Participants

The present studies included 884 participants in five different studies referred in four articles. All five studies have participants from different types of occupations in order to obtain a distribution and a diversified group of participants. These occupations, that are representative, cover both private and public sectors and occupations that require longer as well as shorter educational backgrounds. Moreover, both blue-collar and white-collar personal are included.

The first study, Study I, in Article I, consisted of seventy-five employees (46 male and 29 female) from a variety of occupations, equally distributed, participated. The participants

were derived from the following occupations: nursing assistants, physicians' secretaries, engineers (construction and electronics), foremen, pilots, industrial workers, secretaries, economists and accountants, technical personnel, administrative personnel and individuals employed in middle management. The second study, Study II, in Article I consisted of one hundred and thirty-nine participants (95 male and 45 female participants) equally divided between seven different occupational categories, including physiotherapists, police, sales personnel, construction foremen, teachers, administrative personnel and executive middle management.

Study III, Article II, included two hundred and twelve participants (135 male and 77 female participants) equally divided between eight different occupational categories, including physiotherapists, police, sales personnel, construction foremen, teachers, administrative personnel, IT-personal and executive middle management.

Study IV, Article III, included two hundred and forty-three participants, 159 male (65.4%) and 84 female (34.6%) divided between 74 executives taking part in a leadership course. 37 Participants from two IT-consultant firms as well as 132 participants from nine different occupational categories, including physiotherapists, police, sales personnel, construction workers, construction foremen, teachers, administrative personnel, IT-personal and executive middle management, took part.

Study V, Article IV, included two hundred and fourteen participants (136 male and 78 female participants) equally divided between four different occupational categories, sales personnel, construction foremen, teachers, administrative personnel.

Design

To obtain continuity several of the dependent and independent variables recur in all the studies. More variables were then added for the purpose of getting broader and deeper knowledge on of each following study. All five studies included following dependent variables: "Stress and Energy", "Anxiety" and "Depression". Four of the studies, Study I, II, III, and V; included "dispositional optimism" as a dependent variable. Again four of the studies, Study II, III, IV, and V, included "Subjective Stress Experience; psychological and somatic" as well as Positive and Negative affect as dependent variables. The first study, Study I, also included "Communication" as a dependent variable. The second study, Study II, also included "work-related stress", "coping resources" and "partnership relations" as dependent variables. In Study IV, "Sleep problems" was added as a dependent variable. Furthermore the variable, Illhealth, was constructed by combining the scores accruing from the variables,

Subjective Stress Experience; psychological and somatic, Stress, Anxiety, Depression, and Negative affect. The fifth study, Study V, also included “coping resources” as a dependent variable.

In all five studies “Gender” was a common independent variable. Study I and Study II also had Affective personality as a common independent variable. Three of the studies, Study III, IV and V, all consisted of the independent variable “Work Stress (JSS)”. Studies III och IV included also “Partnership Relations Quality (PRQ)” as a independent variable while Study V included “Sexual life satisfaction (SLS)” as dependent variable, see Table 1.

Affective personality was, in the first two studies, divided into four different personality types through four different combinations of positive and negative affect (see PANAS, below), whereby individuals expressing high positive affect (PA) and low negative affect (NA) were termed “Self-fulfilling”, those with high PA and high NA were termed “High affective”, those with low PA and low NA were termed “Low affective”, and finally those with low PA and high NA were termed “Self-destructive”, according to the procedure derived and applied in earlier studies of Affective personality (Bood et al., 2004; Norlander et al., 2002; Palomo et al., 2004). In Study I the seventy-five participants were distributed over the four affective personality types on the basis of their responses to the PANAS instrument, as follows: 24 individuals expressed high PA and low NA, i.e. “Self-fulfilling”; 15 individuals expressed high PA and high NA, i.e. “High affective”; 14 individuals expressed low PA and low NA, i.e. “Low affective”; 22 individuals expressed low PA and high NA, i.e. “Self-destructive” type of affective personality. In the second study, Study II, the one hundred and forty participants were distributed over the four affective personality types on the basis of their responses to the PANAS instrument, as follows: 38 individuals expressed high PA and low NA, i.e. “Self-fulfilling”; 33 individuals expressed high PA and high NA, i.e. “High affective”; 32 individuals expressed low PA and low NA, i.e. “Low affective”; 37 individuals expressed low PA and high NA, i.e. “Self-destructive” type of affective personality.

Self-reports of PA and NA display asymmetric patterns whereby PA scores ‘weigh’ more heavily than the NA scores. The norm group indicates PA = 3.35 (0.98), and NA = 2.08 (1.00), where N = 6557 individuals. Nevertheless, despite the asymmetry of PA and NA in non-clinical populations, it has consistently been shown that the contribution of NA to health, stress and well-being is markedly greater than that of PA (cf. Archer et al., 2008).

Analysis

Article I, Study I and Study II. A variable, Affective personality was constructed out of PA and NA. MANOVA, One-Way ANOVA and linear regressions analysis was performed, the previous (MANOVA) was performed to examine main and possible interaction effects between affective personality and gender.

Article II, Study III. Work-related stress (JSS) and Partnership relation quality (PRQ) were, through SPSS “rank cases”, each assigned to three groups (e.g. “Low work stress”; “Medium work stress”; “High work stress” and “Low PRQ”; “Medium PRQ”; “High PRQ” respectively) on the basis of participants’ own responses. MANOVA was performed to examine main and possible interaction effects between Work-related stress and gender as well as between Partnership relation quality and gender. Furthermore, analyses were performed through One-Way ANOVA and linear regression, using the hierarchical method.

Article III, Study IV. A variable, Illhealth, was constructed by combining the scores accruing from the variables, anxiety and depression, SSPSYC and SSSOM, stress and sleep problems. Furthermore PRQ were, through SPSS “rank cases”, assigned to three groups (e.g. “Low PRQ”; “Medium PRQ “High PRQ”) on the basis of participants’ own responses. Linear regression, using the hierarchic method was performed. Following the analysis of the results an interview, based on the notion concerning ‘focus-groups’, was carried out with a group consisting of eight men, 50 to 65 years, both married and divorced.

Article IV, Study V. The variable, Sexual life satisfaction (SLS), was through SPSS “rank cases”, assigned to three groups (e.g. “Low SLS”; “Medium SLS; “High SLS”) on the basis of participants’ own responses. The analyses covered: 1) linear regression analysis, using the enter method; 2) one-way ANOVA, and 3) linear regression analysis, using the hierarchical method.

Procedure

In all of the five studies both private and public places of work were contacted with regard to participation of employees in an investigation upon aspects of health. All places of work, but two, were situated in an area of one hundred and fifty kilometres around Gothenburg, Sweden. The other two places of work were situated in the northern part of Sweden. Permission to carry out the study was sought through Heads of personnel, union representatives and persons in positions of responsibility who adjudged whether or not the material could compromise the integrity of the personnel. Places of work choosing not to

allow the investigation provided the following reasons: “This compromises personal integrity”, “We don’t have the time”, and “Our policy is not to take part in any investigations”.

Employees at each respective place of work were informed first by their respective Heads about the study and then asked whether or not they wished to participate. All participation was on a volunteer basis and took place at the usual work place during working hours. Most of the participants were tested in groups of maximally five persons although some were tested singly. Prior to testing, participants were ensured total anonymity as well as the fact that each set of responses was unidentifiable among all the other sets of responses. The rate of participation was between 75 and 85 %.

In order to avoid the possible effects of ordering of each instrument, the order in which each instrument/questionnaire occurred was randomly distributed in each envelop. Each participant picked an envelop randomly out of the box containing them. At the start of testing, participants were informed about the purpose and background of the study and that it was above all on a volunteer basis. It was emphasis that all details of work place and personal identity were to be omitted since total anonymity was essential. On completion of all the instruments, each participant was instructed to replace all the questionnaires in the envelope. All the envelopes were collected and stored until the employees from each of the places of work had completed the tests.

In Study I, Article I, fifteen places of work, both private and public, were contacted. Eight places of work, representing both private and public sectors, accepted to allow the study. Nevertheless, the private sector was somewhat over-represented (68 %). The maximum amount of time allocated for subjects to complete all the questionnaires was 30 minutes. In Study II, Article I, twelve places of work, corporate and public, were contacted, through their respective personnel and union representatives, with an enquiry about participation in the investigation. Seven places of work, both public and corporate, responded to the enquiry. The duration of testing for each participant was about 45-50 minutes. In Study III, Article II, fifteen places of work, both private and public, were contacted. Eight places of work, representing both private and public sectors, accepted to allow the study. Due to the geographic distance for two of the participating places of work the envelopes from the participants was sealed by tape and put in a box at the workplace to be sent by the secretary to the researcher at the university. The participants in this study filled out their questioners one by one at their ordinary workplace. Participants in Study IV, Article III, were recruited from ten places of work, both private and public, and an education firm. In Study V, Article IV,

four occupational categories, sales personnel, construction foremen, teachers, administrative personnel were recruited through five places of work, corporate and public. All five places of work responded positively to the enquiry.

Instruments

Article I: Study I; II; Article II: Study III; Article III: Study IV; and Article IV: Study V

Positive affect and negative affect scale (PANAS). The PANAS-instrument provides a self-estimation of "affect", both positive and negative. It consists of 10 adjectives for the NA dimension and 10 adjectives for the PA dimension. The test manual (Watson, Clark, & Tellegen, 1988) postulates that the adjectives describe feelings (Affect) and mood level. Participants were instructed to estimate how they felt during the last few days. The response alternatives were presented on a five-grade scale that extended from where 1 = not at all to 5 = very much. For each participant the responses to the 10 negatively-charged adjectives were summated to provide a total NA-result for NA affect, and similarly the responses to the positively-adjectives were summated to provide a total PA-result for PA affect. The PANAS instrument has been validated through studies analyzing conditions associated with general aspects of psychopathology (Huebner & Dew, 1995), as well as a multitude of other expressions of affect (Watson & Clark, 1984). Previous studies (Bood et al., 2004; Norlander et al., 2002; Palomo et al., 2004) have modified and developed the PANAS instrument further through a subject-response based derivation of the four types of affective personality (see Design). This procedure was implemented in Study I And II through dividing the results on the PA-scale into two parts thereby distributing the participants into one group with high PA and another group with low PA (*cut-off point* = 53.2%). The same procedure was implemented for the participants' responses on the NA-scale (*cut-off point* = 48.9%). Following this, the results from these two scales were combined according to the procedure that assigned each one of the participants into one of the four affective personality groups, as follows: individuals showing high PA and low NA ("Self-fulfilling"), high PA and high NA ("High affective"), low PA and low NA ("Low affective") and low PA and high NA ("Self-destructive").

Stress and Energy (SE). The SE-instrument is a self-estimation scale that assesses individuals' experience of their own stress and energy (Kjellberg & Iwanowski, 1989). The test is divided into two sub-scales that express each participant's level of mood in the two

dimensions: “experienced stress” and “experienced energy”. Response alternatives are ordered within six-graded scales that extend from 0 = not at all to 5 = very much. The instrument has been validated through studies concerning occupational burdens and pressures (Kjellberg & Iwanowski, 1989). The SE-scale has been constructed from the earlier used checklist, Mood Adjective Check-List (Nowlis, 1965), which was modified by Kjellberg and Bohlin (1974) and Sjöberg, Svensson and Persson (1979). Kjellberg and Iwanowski (1989) reduced the list to 12 adjectives in the two dimensions, stress and energy, which provides the latest version applied here. Cronbach’s testing indicated Alpha = 0.7644.

Hospital Anxiety and Depression (HAD). HAD provides a reliable and valid self-estimation instrument that assesses an individual’s degree of anxiety and depression (Herrmann, 1997). The instrument consists of 12 statements, each followed by four response alternative from which the participant is instructed to mark the appropriate one. The alternatives include: “most often”, “often”, “now and then” and “not ever”. Summated response values under 6 are considered normal, values between 6 and 10 indicate a border level while values above 10 indicate a probable anxiety and/or depression diagnosis.

Partner relationship questionnaire. The questionnaire consists of 45 questions regarding individuals’ partner relationships that are designed to provide a comprehensive outline of these relationships, including sexual relations. The questionnaire contains two types of scales, multiple choice alternatives and an estimation scale from 1 – 10. Examples of questions are, as follows: “How often do you and your partner discuss current events?” Response alternatives are provided in those cases as multiple choice alternatives that vary from “Never or Almost never”, “Seldom”, “Sometimes”, “Often”, to “Very often” (Möller, 2004). Examples of questions applying an estimation scale from 1 – 10 are, as follows: “How much enjoyment do you get out of sexual intercourse?” whereby 1 represents “No enjoyment at all” to 10 “Very intensive enjoyment”.

Study I: The estimation of “Communication”, used as a dependent variable, which relates to the couples’ experienced quality of internal communication, was obtained from 7 of the questions from the questionnaire. Other aspects of the questionnaire were left outside the scope of the present study.

Study II: The estimation of “Partnership relations”, used as a dependent variable, which relates to the individuals’ experienced quality of the couples’ relations including sexual

relation quality, was obtained from 15 of the 45 questions in the questionnaire, and, after Z-transformation, was summarised to form a common quotient ($\alpha = 0,8657$).

Study III and IV: The estimation of “Intern partner relation” which relates to the individuals’ experience of partnership relation quality, excluding sexual relation quality, used as an independent variable, and was obtained from 11 of the questions from the questionnaire. Other aspects of the questionnaire were left outside the scope of the present study.

Study V: The estimation of “Sexual life satisfaction” which relates to the individuals’ experience of sexual life satisfaction excluding other partnership relation quality, used as an independent variable, and was obtained from 13 of the questions from the questionnaire. Other aspects of the questionnaire were left outside the scope of the present study. The question “How often do you consider divorcing your partner?” was also used as a dependent variable.

Article I: Study I; II; Article II: Study III; and Article IV: Study V

Life orientation Test (LOT). The LOT-instrument is a self-estimation instrument that assesses an individual’s degree of dispositional optimism. The instrument is based on a general model, regarding self-regulated behaviour that indicates that optimism exerts meaningful behavioural consequences based on the model (Scheier, & Carver, 1982b; 1985). It was constructed originally to study the extent to which the personality trait optimism was associated with the ability to develop suitable ‘coping strategies’ in connection with severe psychological and physical handicaps (e.g. tinnitus). The instrument consists of 12 statements from which each participant is instructed to assess the extent to which each of these statements fits in with him/her as an individual. The response alternatives are presented on a five-graded scale extending from 0 = “strongly disagree” to 4 = “strongly agree”. LOT is a suitable scientific instrument with an estimated internal consistency of 0.76 (Cronbach’s alpha) and a Test-Retest reliability of 0.79 (Pearson’s r), indicating that the test result is stable over time. The LOT test requires about 5 minutes for completion. Testing has provided separate norms for male and female participants: male participants show a mean of 21.30 (SD = 4.56) and female participants 21.41 (SD = 5.22).

Article I: Study II; Article IV: Study V

Coping Resources Inventory (CRI). This instrument analyses individuals’ resources in stressful situations and consists of five scales: a cognitive, a social, an emotional, a spiritual/philosophical and a physical. The scales reflect different aspects of the ability to

effectively confront cope with and recover from stressful situations. The questionnaire consists of 60 statements that incorporate four different response alternatives: “Never or very seldom”, “sometimes”, “often” or “almost always/always”. Validity investigations indicated that primarily the cognitive and physical scales, as well as the total points, predict incidence and onset of stress symptoms (Ekecrantz & Norman, 1991; Hammer, 1988). Cronbach’s testing indicated Alpha = 0.8945.

Article I: Study II and Article II: Study III; Article III: Study IV; and Article IV: Study V

Job Stress Survey (JSS). The JSS instrument presents a general measure of stress at work. In the test, participants are questioned about the level of seriousness of certain stressors according to how individuals perceive them and how often these stressors have been experienced during the last six months (Spielberger & Vagg, 2002). Through the expediency of assessing the level of seriousness of the stressors as well as their frequency a distinction is made between condition and characteristic under measurement. The participants first estimate the level of seriousness of certain stressors on a 9-graded scale. Following this, they were instructed to assess on a scale from 0 to 9+ how often each incident had occurred during the last six months. Cronbach’s testing indicated Alpha = 0.9121.

Subjective Stress Experience (SSE). The instrument is derived from a diagnostic manual designed to assess different reactions to stress (Lopez-Ibor, 2002). Participants were required to estimate the extent to which different statements concurred with how they felt on an ordinary working day. The first part of the instrument consisted of 23 statements wherein participants were required to respond to the extent to which they experienced, for example, “Nausea or abdominal pain” or “Overreaction to inconsequential inner stimuli/easily frightened”, or, “Muscle tension”, or, “Sleep problems caused by worry”. The test contained statements concerning symptoms implicating autonomic activation, mood changes, tension as well as other non-specific symptoms associated with stress responses. Participants’ estimations were carried out using a Visual Analogue Scale (VAS) whereby they marked a cross on a 10-cm line (1 at one end and 10 at the other) whereby 1 = “do not agree at all” and 10 = “agree completely”. The results of the test provided a total estimation for somatic stress (SSSOM) and one for psychological stress (SSPSYK).

Article III: Study IV

Health and Background questionnaire. The questionnaire is used to assemble background data regarding health and health-related information about the participants. It

consists of questions regarding gender, age, education, smoking habit, exercise, aches and pains, sleep problems, time spent watching TV, and amount of activity associated with occupation. Examples of questions include: “How often have you experienced sleep problems during the past year?” Response alternatives in this case provided for a choice between five different options including: “Constantly”, “2-3 times a week”, “Once a week”, “Once a month”, or “Never”. Each participant was instructed to mark the alternative that was most appropriate for himself/herself.

Study V: From this questionnaire the variable “sleep problems” was used as a dependent variable.

Table 1. Instruments and type of variable (e.g. DV – Dependent variable, IDV - -Independent variable)

| Selfreport test | Study I | Study II | Study III | Study IV | Study V |
|----------------------------------------------------------|-------------------|-------------------|-------------------|---------------------------------------|-------------------|
| <i>Positive affect and negative affect scale (PANAS)</i> | IDV | DV IDV | DV | DV* ⁴ | DV |
| <i>Stress and Energy (SE)</i> | DV | DV | DV | DV* ⁴ | DV |
| <i>Hospital Anxiety and Depression (HAD)</i> | DV | DV | DV | DV* ⁴ | DV |
| <i>Partner relationship questionnaire</i> | DV* ¹ | DV* ² | IDV* ⁶ | IDV* ⁶ | IDV* ⁷ |
| <i>Life orientation Test (LOT)</i> | DV | DV | DV | | DV |
| <i>Coping Resources Inventory (CRI)</i> | | DV | | | DV |
| <i>Job Stress Survey (JSS)</i> | | DV | IDV | IDV | IDV |
| <i>Subjective Stress Experience (SSE)</i> | | DV | DV | DV* ⁴ | DV |
| <i>Health and Background questionnaire</i> | IDV* ⁵ | IDV* ⁵ | IDV* ⁵ | DV* ³ IDV* ⁵ | IDV* ⁵ |

*¹ A sum of 7 questions about “Communication”

*² A sum of 15 questions were combined to derive the variable “partnership relations”

*³ Sleep problems - One question taken from the “Health and background questionnaire”;

*⁴ Included in the variable Illhealth; *⁵ Gender;

*⁶ PRQ - Sum of 11 number of variables; *⁷ SLS - Sum of 12 number of variables

Results

Article I, Study I.

The Pillai's MANOVA with Affective personality and Gender as independent variables and with Stress, Energy, Anxiety, Depression, dispositional optimism, and communication as dependent variables did not indicate any Affective personality x Gender interaction effect, but did indicate a significant effect of Affective personality, and for Gender.

One-way ANOVA indicated significant Gender effects only for Anxiety, whereby the female participants expressed a higher level of anxiety than the male participants. There were no significant Gender effects for any of the other variables.

A One-way ANOVA was also performed with Affective personality as independent variable indicating that the Self-destructive and the High affective groups expressed significant higher degree of Negative Affect; Depression and Anxiety than the Self-fulfilling group. The Self-fulfilling group expressed significant higher degree of Positive Affect; dispositional optimism, and Energy than the Self-destructive group. The Low affective and High affective groups were here intermediate.

No significant effects were obtained for communication or stress.

Regression analysis

A linear regression analysis was performed to examine the extent to which positive and negative affect, respectively, may be predicted from stress and energy, anxiety and depression, dispositional optimism and communication. The analysis indicated that Positive affect: could be predicted significantly from dispositional optimism, whereas as depression was counter-predictive for positive affect. It was indicated that Negative affect: could be predicted significantly from stress and anxiety, whereas dispositional optimism was counter-predictive for negative affect.

Article I; Study II

Pillai's MANOVA did not indicate any interaction effect between Affective personality and Gender in this study either but as in Study I indicated main effects of Affective personality and Gender.

One-way ANOVA indicated the following significant effects for Gender: Female participants showed, in relation to male, a higher degree of emotional and spiritual coping, as well as more energy. They displayed too higher levels of stress, anxiety, work stress, work burden, and total work-related stress than male participants.

There were no significant Gender effects for Positive or Negative affect, Cognitive coping, Social coping, Physical coping and Total coping, or Lack of organizational support or Partnership relations.

One-way ANOVA was also performed with Affective personality as independent variable. The result confirmed the distribution of PA and NA with the four types of affective personality (see Study I).

Coping. The Self-fulfilling group showed the highest scores whereas the Self-destructive group showed the lowest for each type of coping, emotional, physical, social, spiritual, as well as total coping. They showed too higher cognitive coping than the High affective group. The Self-destructive group showed less cognitive, physical and social coping than the Low affective group, and less cognitive and social coping than the High affective group.

Work-related stress. The Self-destructive group experienced a greater paucity of organisational support than the Low affective group, more work stress and total work-related stress than the Low affective and Self-fulfilling groups.

Partnership relations. The Self-destructive group expressed a significantly worse quality of partnership relations than the Self-fulfilling group.

Dispositional optimism, Depression, Anxiety and Stress. The Self-destructive group expressed the lowest score for dispositional optimism but the highest scores for depression, anxiety and stress, as follows: the group expressed (i) significantly less dispositional optimism the Low affective and Self-fulfilling groups, (ii) significantly more depression than the other three groups, and (iii) significantly more anxiety and stress than the Self-fulfilling and Low affective groups.

Regression analysis

A linear regression analysis was performed to examine the extent to which positive and negative affect, respectively, may be predicted from stress and energy, anxiety and depression, dispositional optimism, Repair (experienced quality of partnership relations), CRI (Cognitive coping, Social coping, Emotional coping, Spiritual coping, Physical coping and Total coping), and JSS (Work burden, Lack of organizational support, Work stress and Total Work-related stress), whereby the former provided the dependent variables and the latter the independent variables. The analysis indicated that Positive affect: could be predicted significantly from the CRI coping variables, Energy and Partnership relations, whereas stress was counter-predictive for positive affect. It was indicated too that Negative affect: could be

predicted significantly from the Job Stress Survey variables in total and Stress, whereas dispositional optimism was counter-predictive for negative affect.

Articl II, Study III

Effect of Work-related stress

In order to analyse whether or not different degrees of work-related stress (JSS) affected the self-reported measures of health/illhealth, the individual scores on this variable were, via SPSS, assigned to three groups on the basis of subjects' own responses to the questionnaire:- Group 1 ("Low work stress") reported low levels of stress on the JSS instrument, Group 2 ("Medium work stress") reported intermediate levels and Group 3 ("High work stress") reported high levels. The independent variables were Work-related stress, Partnership Relation Quality and Gender whereas the dependent variables were stress, energy, anxiety, depression, psychological and somatic stress reactions, positive and negative affect and dispositional optimism.

Pillai's MANOVA with work stress (JSS) and Gender as independent variables indicated significant main effects for Work-related stress (JSS) and for Gender, but no Work-related stress x Gender interaction effect.

One-way ANOVA with work-related stress (JSS) as independent variable indicated that Group 3 ("High work stress") expressed the highest values for anxiety, stress, psychological and somatic stress reactions, NA and depression concurrent with the lowest values for energy and LOT. Pairwise testing indicated that Group 3 ("High work stress") showed higher values than Group 1 ("Low work stress") and Group 2 ("Medium work stress") for stress and psychological subjective stress reactions. Group 3 ("High work stress") showed higher values than Group 1 ("Low work stress") for anxiety and somatic subjective stress reactions, whereas both Groups 2 and 3 expressed higher negative effect than Group 1.

No significant effects were obtained for depression, energy, LOT or positive affect.

Effect of Partnership Relation Quality (PRQ)

In order to analyse whether or not the different degree of work stress (JSS) affected the self-reported measures of health/illhealth, the individual scores on this variable were, via SPSS, assigned to three groups on the basis of subjects' own responding:- Group 1 ("Low PRQ") reported low levels of PRQ, Group 2 ("Medium PRQ") reported intermediate levels and Group 3 ("High PRQ") reported high levels of PRQ.

Pillai's MANOVA with PRQ and Gender as independent variables and with stress (SE), energy (SE), anxiety, depression, psychological and somatic subjective stress experience, positive and negative affect as well as LOT as dependent variables indicated significant main effect of PRQ and Gender, but no PRQ x Gender interaction effect.

Group 1 ("Low PRQ") indicated the highest values for depression, anxiety, stress, NA, somatic and psychological subjective stress reactions but also energy. This group showed too the lowest values for LOT and PA.

One-way ANOVA followed by post hoc testing (Bonferroni's test, 5% level) indicated that there were significantly higher values for Group 1 ("Low PRQ") in relation to Group 3 ("High PRQ") and Group 2 ("Medium PRQ") with regard to depression and NA, as well as compared to Group 3 regarding anxiety and stress. Further, Group 2 ("Medium PRQ") expressed higher values than Group 3 ("High PRQ") with regard to stress.

No significant effects were obtained for energy (SE), psychological and somatic subjective stress experience positive affect or dispositional optimism (LOT).

Effect of Gender

One-way ANOVA with Gender as independent variable indicated female participants expressed significant higher levels, than male participants, for the following variables: anxiety, stress and psychological subjective stress experience but also for energy.

No significant Gender effects were obtained for depression, somatic subjective stress experience, positive and negative affect or dispositional optimism (LOT).

Regression analysis

Linear regression analysis was performed, applying the hierarchic method, to examine the extent to which anxiety and depression, stress and energy, psychological subjective stress experience and somatic subjective stress experience, may be predicted from (i) work stress (JSS) and (ii) partnership relation quality (PRQ).

The analysis indicated that Depression, Anxiety, Stress, Psychological stress, and Somatic stress were each predicted significantly from JSS whereas PRQ was counter-predictive for each of these five estimates of illhealth.

In summary, the two first studies indicate that NA is a potent factor regarding health/illhealth as defined by the present parameters. This contention is displayed in Studies I and II whereby the High Affective group, despite high values for PA, showed higher values

on total health, generally following the Self-destructive group (Characterised by low PA and high NA). These studies indicate too the relation between NA and coping whereby the High Affective group, again despite high values for PA, showed lower values for coping, here too generally following the Self-destructive group. In Study III, article II, the potency of NA is reinforced since, besides confirming earlier observations, a clear relation with work-related stress and low partner relationship quality.

Conversely, the results indicate that the absence of NA exerts positive influence upon health aspects such as coping behaviour, experienced work-related stress and higher quality of partner relationships. The latter was found to have positive influences upon health with regard to experience of both stress in general and work related.

Article III, Study IV

Linear regression analysis showed that Illhealth, for both men and women, may be predicted from work related stress (JSS) and that partnership relation quality (PRQ) was counterpredictive. The result indicates that PRQ might be a buffer for external stress factors such as work related stress. There were also significant effects following regression analysis, whereby Illhealth was predicted by JSS for all three PRQ groups.

On the basis of Gender, male participants showed significant predictive values for each of the PRQ groups whereby the “Medium PRQ” group showed the highest level, followed by the “High PRQ” group, and the “Low PRQ” group. The female participants showed less significantly predictive results for the “Low PRQ” group.

Furthermore, linear regression analysis was performed to examine the extent to which each of the variables contributing to the variable, Illhealth, i.e. depression, anxiety, psychological subjective stress experience and somatic subjective stress experience, stress och energy, and sleep problems may be predicted by JSS, as a function of the PRQ groups and gender. For men, the results for the “Low PRQ” group only showed significant results for the psychological subjective stress experience. While the result for the “Medium PRQ” group showed significance for six out of nine variables (e.g. depression; anxiety; psychological subjective stress experience; somatic subjective stress experience; negative affect; and general stress), and the results for the “High PRQ” group showed significant results for anxiety and general stress. Contrary to men, the linear regression analyses for women showed that the “Low PRQ” group showed significant result for six out of nine variables (e.g. anxiety; psychological subjective stress experience; negative affect; general stress, sleep deprivation; and positive affect). Finally, the result for the “Medium PRQ” group and the “High PRQ”

group showed significant results for depression and somatic subjective stress experience respectively.

In summary, the group interview, the group participants demonstrate a high degree of agreement regarding issues and conclusions and each of the participants was engaged actively in the discussion. The conclusion of the interview was that existing in a partnership relation that could be characterized as being in the medium partnership relation quality group was defined as definitely least advantageous bearing as it does the responsibility and effort of getting the relationship working. On the other hand, in a partnership relation with low quality, one “gives up” and either stay or moves on with a divorce. A high quality relation provides someone to depend on and who is supportive.

Article IV, Study V.

Linear regression analysis showed that Sexual life satisfaction (SLS) could be predicted from intimate communication, intercourse frequency, accordance with desired frequency, caressing and cuddling, and intercourse orgasm. Further analyses showed that SLS among male participants was predicted significantly from *intercourse satisfaction, intercourse frequency, accordance with desired frequency, and frequency of sex-partners during last month* whereas the result for female participants indicated that SLS were predicted significantly from *Intimate communication, caressing and cuddling, and desire*. Results from the One-way ANOVA, over all participants, showed significant differences between the three groups of SLS where the group with low SLS indicated significantly higher levels of: depression, anxiety, thoughts of divorce and negative affect than the High SLS group. While the group with high SLS indicated significantly higher levels of emotional coping, social coping, partnership relation quality, and positive affect compared with the Low SLS group.

The gender analysis indicated differences between male and female participants where the results for male participants showed significant differences between the three groups of SLS where the group with low SLS indicated significantly higher levels of: depression, anxiety, general stress, and thoughts of divorce together with significant lower levels for partnership relation quality compared with the High SLS group. The result for female participants showed significant differences between the three groups of SLS, where the group with low SLS indicated significantly higher levels of depression and anxiety compared with the High SLS group and significantly lower levels of: cognitive, emotional, and social coping together with lower levels of dispositional optimism and partnership relation quality again compared with the High SLS group.

Linear regression analysis showed that depression, anxiety, general stress, and negative affect may be predicted from work related stress (JSS) and that sexual life satisfaction (SLS) was counterproductive. The result indicates that SLS might be a buffer for external stress factors such as work related stress.

Discussion

“People who expect to derive a sense of existential significance from their work, enter their chosen careers with high goals and expectations, idealistic and motivated. When they feel that they have flailed, that their work is insignificant, that they make no difference in the world, they start feeling helpless and hopeless and eventually burn out!” (Pines & Keinan, 2005, p. 626). The same situation may pertain to partner relations. Individuals begin with high ideals, expectancies, ambitions and motivation. Later, when they feel that they have failed, that their efforts within the relationship are meaningless, that they make no difference in the world, then they begin to experience helplessness and hopelessness; perhaps this ‘state-of-affairs’ develops into burn-out. If both situations occur concomitantly, work-related and partner-related, the rate at which risk for burn-out and illhealth occurs, increases dramatically.

Work-related stress is part of the repetitive lesser stressors that influence partner relations. Bodenmann et al. (2007) indicated that stress itself may affect marital functioning importantly, by showing associations between partners where the woman’s reported levels of stress report levels were strongly correlated with the man’s reported degree of stress, and vice versa. The result indicated too that relations-related functions, such as sexual activity, sexual satisfaction and sexual dysfunction showed links with external stress as well as marital satisfaction. These finding underline the observations from the present results.

One could argue that stress and tension, worked up during an ordinary workday may be released during work-free hours. In order to gather new strength for the next workday one needs recovery opportunities and one of those recovery opportunities is connected with partnership, often but not necessary in the form of marriage. In the industrial cultures, partnership relation often is a desired part of the adult life. If this partnership relation is experienced as well-functioning and without the burden of repeated internal conflicts it might offer a setting that encourages relaxation and personal growth. While it, on the other hand, when filled with internal conflicts, might be another source of stressful interactions, an impossible equation when it comes to recovery.

The five studies related to in Articles I to IV are all focused on employed individuals working in both private and public sectors. The aim was to cover a variety of occupations including typical male, female and mixed workplaces. The studies were to examine health factors in relation to affective state, work related stress and partnership relation quality.

Study I, Article I, was performed to examine the extent to which the four types of affective personality may be associated with individuals' experience of general stress and energy level since previous findings have demonstrated marked relationships between affective personality type and stress and affect (Bood et al., 2004; Norlander et al., 2002). The study examined also health factors (e.g. depression and anxiety), dispositional optimism and internal partnership communication and to what extent these factors were affected by the four types of affective personality. Furthermore, the study ascertained to what extent positive and negative affect, respectively, may be predicted by from stress, energy, anxiety, depression, dispositional optimism, and internal partnership communication.

Study II, Article I, was, in addition to Study I, carried out to examine the extent to which the four types of affective personality may be associated with individuals' experience of work related stress, coping resources, experienced physical and psychological reactions to stress, and partnership relations quality, including the quality of the sexual part of the relationship. Furthermore, the study, as in Study I, examined to what extent positive and negative affect, respectively, may be predicted by general stress, energy, dispositional optimism, partnership relations quality, work related stress, and coping resources.

The following three studies, Study III to V (study I in Article II, study I in Article III, study I in Article IV), investigated factors connected with partnership relations (e.g. internal partnership relation quality and sexual life satisfaction) and its associations with the effect work-related stress exerted upon health.

Study III, Article II, was performed to examine the extent to which the three groups of work related stress and the three groups of partnership relation quality, excluding the sexual part of the relationship, may be associated with individuals' experience of dispositional optimism, general stress, affective state, health factors (e.g. depression and anxiety), and experienced physical and psychological reactions to stress. Furthermore, *Study IV, Article III*, examined the extent to which the variable Illhealth could be predicted from work-related stress and partnership relation quality. The study investigated also to what extent each of the variables contributing to the variable, Illhealth, (e.g. depression, anxiety, psychological and somatic subjective stress experience, energy, and sleep problems) may be predicted by work-

related stress, as a function of the PRQ groups and gender. In order to inspect more closely the results, a group interview, directed towards the male participants, was carried out for the purpose of obtaining a deeper insight of the results.

The final study, *Study V, in Article IV*, had its focus upon sexuality and sexual life satisfaction. Firstly, the study examined which factors predicted sexual life satisfaction, and, secondly the extent to which the three groups of sexual life quality may be associated with individuals' experience of health/illhealth, coping strategies and positive and negative affect, as well as dispositional optimism. Furthermore, the study investigated to what extent work stress and sexual life satisfaction may predict depression, anxiety, energy, general stress, psychological and somatic subjective stress experience, negative and positive affect.

As shown in the introduction, positive and negative affect are closely connected with health and illhealth. The present results indicated that Positive affect (PA) may be predicted by coping strategies, our level of energy, and our partner relation quality while stress and depression will reduce the level of positive affect. Conversely, Negative affect (NA) decreased with high levels of dispositional optimism and increase by anxiety, work-related and general stress.

The results also indicated that affective personality type, constructed from of PA and NA, was associated with individuals' levels of depression and anxiety, as well as stress and energy which contributes to an individual's ability to deal with life situations. Individuals with a Self-fulfilling type of affective personality (i.e. showing high positive and low negative affect) presented the lowest levels of anxiety, depression, and stress and yet the highest levels of energy, and dispositional optimism which provide predictors of work-efficacy and health (Scheier & Carver, 1982). Conversely, individuals with a Self-destructive type of affective personality (i.e. showing low positive and high negative affect) presented the highest levels of anxiety, depression, and stress together with the lowest levels of dispositional optimism, and a markedly lower level of energy than the Self-fulfilling type. Individuals with a High-affective type of personality (i.e. showing high positive and high negative affect) presented high levels of energy, dispositional optimism concurrent with high levels of anxiety, depression and stress whereas individuals with a Low affective type of affective personality (i.e. showing low positive and low negative affect) presented lower levels of anxiety, depression and stress than the Self-destructive and High affective types (i.e. those expressing high negative affect) but lower levels too of energy, dispositional optimism than Self-fulfilling and High-affective types (i.e. those expressing high positive affect).

Moreover, “Self-fulfilling” individuals expressed the lowest values for work-related stress as well as the highest total value over all five dimensions of coping. This quality, reflecting the capacity to deal with life events, is reinforced further as these individuals presented the highest values for partnership relations. It ought to be noted that optimism and self-esteem have been found to predict the outcome of expected challenges and are associated with somatic health (Scheier & Carver, 1982). In contrast, “Self-destructive” individuals expressed the highest values for work-related stress, the lowest total value over all five dimensions of coping, dispositional optimism, with inevitable consequences for their experience of stress. Within this context, it is understandable that these individuals expressed least satisfaction for their partnership relations. The “High affective” and “Low affective” individuals expressed values somewhere between those of the Self-fulfilling and Self-destructive, once again.

Moreover, the results show that clear Gender effects were obtained in all the studies. Women, in comparison to men, report higher levels of illhealth (e.g. anxiety, general stress, psychological and somatic subjective stress experience) as well as more work-related stress. Furthermore, women also showed higher level on energy together with emotional and spiritual coping. Stroink (2004) found that the conflicting demands, assessed by the Conflicting standards Dilemma, posed strong implications for affect, mood and coping in a sample of 225 women. Social expectations upon women, often complex and contradictory, exerted negative impact on women who have not developed adaptive coping styles. Wilson, Pritchard and Revallee (2005) examined 546 adolescents on their coping styles and symptoms. They obtained gender differences in physical and psychological health symptoms (e.g. anger, depression, tension, negative moods), in coping styles and in the relation between health symptoms and coping style. Klag and Bradley (2004) studied the main, moderating and mediating effects of hardiness in a sample of 130 (50 male, 80 female) randomly selected university staff members. They found that that the ‘buffering’ impact of hardiness for the effects of stress on illness was observed in the male participants, but not in the female participants (see also, Kenney & Bhattacharjee, 2000). In a PANAS study by Karlsson and Archer (2007) concerning the relationship between personality traits (Gordon’s Inventory), stress and energy, subjective stress, and coping behaviour in 186 male and female university students, gender effects were obtained by which female participants expressed a higher level of Responsibility and Vigour, but more psychological stress and more emotional coping than the male participants who expressed a higher level of physical coping behaviour. Taken

together, those recent findings and the present results suggest that novel notions on the types of coping strategies available across gender are required.

Nevertheless, the results from the present study of work-related stress and partnership relation quality each divided into three groups showed the following results: 1) the group with low level of work-related stress differed significantly from the group with high level of work-related stress when it came to negative affect, anxiety and general stress. The low work-related stress group also had significantly lower levels of subjective stress reaction experiences, both psychological and physiological, while, 2) the group with low partnership relation quality had significantly higher levels of depression, anxiety, stress and negative affect in relation to the group with high partnership relation quality. Work-related stress is often encountered as an important factor that induces illhealth in adult at the place of work (Melamed et al., 2006). Several studies have shown that unpleasant workplace conditions have a negative influence upon employees physical and mental health (Quick & Tetrick, 2003; Schabracq et al., 2003). The accumulated effects of high levels of chronic workplace stress, lack of recovery time, high performance requirement and psychobiological concomitants lead to serious loss of energy, exhaustion and breakdown (Demerouti et al., 2005). The evidence from the present studies indicated that partnership relation quality exerts a positive influence upon health and thereby ought to influence the recovery process. Thus, partnership relation quality seems to counteract the potentially unpleasant workplace conditions and to reduce negative effects upon health due to experienced work-related stress.

Kiecolt-Glaser & Newton (2001) have shown that emotional support from a partner is related to low risk for cardiovascular and other types of mortality. Levels of blood pressure are particularly sensitive to the supportive or non-supportive relations between partners (Broadwell & Light, 1999; Carels et al., 1998; Gump et al., 2001). It is hypothesised that oxytocin may be the primary physiological mediator in the health-producing effects of emotional support, particularly when linked to warm and intimate caressing (Insel & Young, 2001; Moyer et al., 2004). Light et al. (2005) found that a higher frequency of embracing and massage from the partner was associated with a higher baseline of oxytocin levels. They found too that frequency of embracing correlated with partner-support and that women reporting more frequent partner embraces showed lower baseline levels of blood pressure as well as lower heart rates during stressful conditions. A profile of more frequent partner-embracing was associated with higher baseline levels of oxytocin and lower cardiovascular response. Women presenting higher oxytocin activity showed a more effective and goal-oriented, time-limited stress response but no reduction in the peak stress response (Light et al.,

2005). Thus, high quality partnership relations may contribute with positive influences to health, and on the other side of the coin, unhappy relations may be potential psychosocial stressors with accompanying risks for illhealth (Rook, 1998).

The presence of 'cross-over' effects between family-and-work and work-and-family have been investigated. Barnet et al., (2005) found that partnership-related difficulties influenced biological functioning during the course of the work-day. The analysis of subjective stress also indicated that men and women expressing high levels of marital difficulty reported higher degrees of stress both during working and leisure hours. Implying that dissatisfaction in partnership relations may underlie the distress contributing to elevated levels of depression and anxiety. Barnet et al. (2005) showed similar results whereby poor marital quality, among middle-aged couples with long relationships, could induce chronic stress, leading to resignation and withdrawal. DeLongis et al. (2004) found that spousal strain interacted with spousal support to predict 'next-day' negative affect. Work-place-to-family cross-over effects (Brotheridge & Lee, 2005) whereby stressors from one partner's work to the other have been examined (Crossfield et al., 2005). Thus, Westman and Etzion (1995) found cross-over effects of burnout transferred from army career officers to their wives and vice versa, whereas Demerouti et al. (2005) observed cross-over effects between the workplace and family among 'dual-earning' couples. Shulz et al. (2004) showed the relationship between work and family whereby the negative arousal of workdays was associated with more aggressive marital behaviour among women and less aggressive, but more withdrawn, marital behaviour among men. Furthermore, daily fluctuations in the workday rhythm predicted women's marital behaviour. The investigation showed too that several of these workday-marital behaviour relationships varied as a function of the degree of marital satisfaction (cf. Shulz et al., 2004).

Additionally, the present results indicated that depression, anxiety, general stress and psychological subjective stress experience were significantly predicted by work-related stress and that partnership relation quality was significantly counter-predictive for these variables, thereby reinforcing the notion that good partnership conditions may counteract the negative effects of stress generated at the workplace. Taking into consideration previous research concerning the health consequences of work-related stress, the present findings imply that there exists a strong association between partnership relation quality, work-related stress and health/illhealth. The notion of "recovery" may offer a framework for understanding this association. Sluiter et al. (2001) draw attention to the negative consequences that are linked to repeated dissatisfactory recovery from work-related stress. They hypothesized that when

recovery is lacking, extra effort must be invested at the start of each work period in order to retain balance in the psychophysiological condition of unbroken activation and to ensure against a collapse of performance, implying too the negative consequences may be brought on by repeated exposure to 'lesser' stressors in the absence of recovery. Hobfoll (2002) indicated that if individuals fail to obtain new resources after having invested resources during the working day, this will cause stress. Grandey and Cropanzano (1999) confirmed this notion by demonstrating that long-lasting stressors associated with the workplace or family drain individuals' resources thereby elevating stress reactions. Taken together, these notions underline the relevance of a recovery framework for describing the work-family-health situation.

Gender differences were obtained also when partnership relation quality was split into three groups and gender, and then examined to what extent these groups differed in their association with factors regarding health/illhealth and coping strategies. For women, low partnership relation quality predicted factors related to illhealth while these factors were predicted by medium partnership relation quality, for men. In this light, it is of interest to consider that poor marital relations affect women's physical health more adversely than men's (Leveson et al., 1993) concurrent with the observation that partner support is more strongly linked with marital satisfaction for women than for men (Acitelli & Antonucci, 1994). The association between partnership relation quality and the influence of coping ability in stressful circumstances has been shown (Neff & Karney, 2005; Troxel et al., 2005). In addition, it has been found that difficulties in partner relations are accompanied by higher levels of stress at work (Barnet et al., 2005; Shulz et al., 2004). A positive association between intimacy in marital relations and more effective responses to stress have been shown too (Light et al., 2005). It is difficult to explain the finding that male participants' levels of illhealth as a function of partner relation quality and work-stress differed so markedly from that of the female participants. It is possible that the outcome of the interview group discussions may offer some insights. Here, the male participants implied that responsibility, effort and the feeling of insufficiency underlie less-than-satisfaction affect/mental illhealth. Relational problems accompany individuals throughout until the problems are solved or one 'gives-up'. These notions imply that it is worse to exist in a relationship of mediocre quality since there is a will and responsibility to try to improve the relationship; something that ensures that the problems will continue until the objective is reached or that the insight of a lack of any solution occurs. In the case of an unsatisfactory or bad relationship, one is forced to admit defeat and declare that nothing more can be done to improve the relationship. This situation

may lead to a form of passivity and 'learned helplessness'. On the other hand, a well-functioning relationship may offer support in a variety of situations whether they be work, illness, children, or any others. Here, an experience of safeness and security in relation to the individual one has given one's trust occurs. This notion confirms that of Major et al. (1997) indicating that positive support offers a buffer against stress as long as the intimate is not the source of conflict. One limitation of the interview is that the average age was greater than that of the participants and that the participants were recruited by convenience.

The present studies were concerned also with the notion of sexual life satisfaction sexual life satisfaction here represented by: 1) which factors that may predict sexual life satisfaction, 2) how different levels of sexual life satisfaction may be associated with illhealth, coping and partnership relation quality, and 3) how sexual life satisfaction was associated with the effect of work-related stress exert upon health. The results indicated a gender difference regarding which factors that predicts sexual life satisfaction. Where sexual life satisfaction for women was predicted by more relation quality oriented factors such as intimate communication, caressing and cuddling, and desire, while sexual life satisfaction, for men, on the other hand, was predicted by factors more related to the sexual activity such as intercourse frequency; if the obtained intercourse frequency was as desired, if there had been more than one sexual partner, and the intercourse satisfaction. The results also showed that low sexual life satisfaction was associated with significantly higher levels of illhealth factors and lower levels of partnership relation quality both for men and women, but also that high levels of sexual life satisfaction were associated with significant higher levels of cognitive, emotional and social coping for women. These results are concurrent with earlier research where gender differences were obtained (Heiman, 2002; Sprecher, 2002; Træn, 2007).

Of even more interest is the present result indicating that sexual life satisfaction may 'buffer' the effects of work-related stress has upon illhealth variables. Work-related stress, as expected, predicts increased levels of depression, anxiety, general stress and negative affect, but, the influence of sexual life satisfaction is decreasing the level of these variables. There seems to be little, if any, research on the issue of whether or not the sexual life satisfaction parameter, has a 'buffering effect' upon stress as an illhealth factor.

In summary, the results indicated that partnership relation quality may function as a 'buffer' against the negative effects that work-related stress constitute upon illhealth variables such as depression, anxiety, stress and psychological subjective stress experiences and that

sexual life satisfaction may have the same buffering function when it comes to effects of work-related stress on negative affect, depression, anxiety, and general stress.

It has been postulated that negative stressors, e.g. work-related stress and financial problems, lead to deterioration in mental health (Bolger et al., 1989), and also influence the quality of a relationship though it be classified as high partnership relation quality, i.e. strong and satisfying (Conger et al., 1999). Previous investigations have indicated that partnership relation quality is associated with partners' propensity to help each other in coping with personal difficulties and experience of stressful situations (Neff & Karney, 2005); partnership relation quality is linked also with higher levels of marital satisfaction within the relationship including, partner support (Pasch & Bradbury, 1998). It is noteworthy that, according to Coyne and DeLongis (1986), support from other directions does not compensate for lack of partner support.

Taken together, the present findings point towards a broad perspective, incorporating type and quality of partnership relations, for eventual treatment regimes directed at problems arising from work-related stress. Fruzzetti and Linehan (2004) imply the importance and relevance of couple-related factors in assessments of individual psychopathology, and vice versa, both in disorder neurodevelopment but also in the context of relapse and recovery from distress (Palomo et al., 2004). Arkowitz-Westen and Fruzzetti (2004) showed that validity behavior predicted higher levels of satisfaction among couples in a cross-section of clinic and community populations. Schaer, Bodenman and Klink (2008) found that couples coping enhancement training (CCET) was significantly more effective than individual coping intervention both not only when it came to relationship related variables but also in such individual variables as burnout. What Bodenmann & Shantinath (2004) also found was that men found CCET attractive as they could benefit from the coping modules not only in their personal but also in their professional life. The consensus of these and other findings suggest the attainment of long-term and lateral health benefits for individuals afflicted by occupational stress requires a proper understanding of partnership relations in order to reinforce the positive intervention achieved through coping strategies, cognitive and behaviour therapies.

Hawkins and Booth (2005) showed that individuals do not have to have had an 'empty' relationship in order to have experienced a negative influence on well-being. Even individuals who report themselves to be "pretty happy" belong to the at-risk group with regard to health

risks and well-being, particularly if they experience themselves ‘prisoners’ of a relationship due to personal or structural reasons.

...that body and mind "may alike
be implicated and demand the
same attention"
Anon, 1912
(Loughran, 2008)

This thesis set out to investigate the influence of affective state and partnership relation on work stress related health effects. The results were predominantly based upon self-reported data, with the exception of certain group interviews. Several questions and issues remain unanswered. The answers to these need more research. It is intended that the planned study with focus groups of each gender will elucidate these issues. Moreover, there may exist explanatory models that can provide a deeper conceptual finesse to the observed results. Such models may incorporate the issue of gender roles. The notion of gender is a wide topic reaching from evolutionary aspects, through traditional gender roles, unpaid workload, to more modern notions, as for example equity theory. Nevertheless, one ought to bear in mind that there are greater differences within each gender than those that exist between the two genders, even though there are differences between the genders that may be of interest to discuss further. Consequently, the gender role discussion was beyond the scope of this thesis and will therefore remain to be studied elsewhere.

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Appendix

I Andersson Arntén, A-C., Jansson, B., & Archer, T. (2008). Influence of Affective Personality type and gender upon coping behavior, mood, and stress. *Individual Differences Research; 6(3): 139-168.*

II Andersson Arntén, A-C., Jansson, B., & Archer, T. (2008). Self-reported partnership relations and work-stress as predictors of health and illhealth. *Submitted article.*

III Andersson Arntén, A-C., Rosén, S., Jansson, B., & Archer, T. (2008). Partnership relations mediate work-stress effects on health. *Submitted article.*

IV Andersson Arntén, A-C., & Archer, T. (2008). Sexual satisfaction as a function of partnership attributes and health characteristics: effect of gender. *Submitted article.*