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Work-related Stress and Health among Hotel Employees in Malmø

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Preface

I would like to dedicate a big thank you word to all the participants of this study. Through various collaborations I designed my final Master's theses of Public Health. Thank you to everyone who contributed that my research was successfully carried out.

A big thank you word as well to my supervisor PhD Goran Ejlertsson, who has been giving support, feedback and discussion through the whole writing process.

Respectfully,
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Abstract

Over the past three decades, there has been a growing belief in all sectors of employment and in government that the experience of stress at work has undesirable consequences for the health and safety of individuals and for the health of their organizations. Identification of factors responsible for stress and its management at its primary level has long term benefits both for employee and employer. The hotel is generally seen as a sector whose working environment involves many stresses and strains. It is very important to measure the stress level among employees and to identify the factors that create stress in order to lessen its impact on employee's health and work. The aim of this study was to investigate possible relationships between various levels of occupational stress and socio-demographic characteristics of hotel employees and to apply Karasek's Demand /Control/Support Model to an analysis of the relationships between job type and perceived stress and stress behaviours among hotel workers. The objective was that the results should be able to be used in working out a health promoting organization. The data collection has been made by a questionnaire study answered by hotel employees of selected hotels in Malmö. The results showed 39% of employees in a hotel industry feel that they are always or often stressed. Bad health was found among employees in high strain jobs (64%). Employees in iso-strain jobs were more stressed (61%) and had bad health (35%) in comparison to other job types. High job demands and low social support were associated with stress. High demands and low control were associated with presence of negative health. Active jobs (OR=6, 79), bad health (OR=5, 14), dissatisfaction with work (OR=4, 61), lack of work experience (OR=3, 6), lack of support (OR=3, 02), $p=0,028$, low general demands (OR=4, 2) showed to be important predictors of work characteristics in stress perception.

Keywords:

Stress, health, work and socio-demographic characteristics, Demand/Control/Support model.

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Sammanfattning

Under de tre senaste årtiondena har det såväl på arbetsmarknaden som på regeringsnivå funnits en allt starkare tro på att upplevelsen av stress i jobbet har oönskade konsekvenser för hälsan både hos människorna och hos deras organisationer. Att på ett tidigt stadium kunna identifiera vilka faktorer som orsakar stress, och hur de skall kunna hanteras, innebär långsiktiga vinster både för de anställda och för arbetsgivarna. Arbetsmiljön inom hotellsektorn anses allmänt innebära såväl stress som andra påfrestningar. Det är viktigt att mäta stressnivån bland de anställda och att identifiera de faktorer som skapar stress för att minska deras inverkan på arbetstagarnas hälsa och arbete. Syftet med den här studien bland hotellanställda var dels att undersöka möjliga samband mellan olika nivåer av yrkesrelaterad stress och sociodemografiska karakteristika, dels att tillämpa Karaseks krav-kontroll-stöd-modell i en analys av samband mellan å ena sidan typ av jobb och å andra sidan upplevd stress och stressrelaterat beteende. Avsikten var att resultaten skulle kunna utnyttjas för att skapa en modell över en hälsofrämjande arbetsplats. Datainsamlingen gjordes genom en enkätundersökning bland anställda på utvalda hotell i Malmö. Resultaten visade att 39 % av de hotellanställda upplevde sig stressade alltid eller ofta. Dålig hälsa var vanligt bland personal med spända jobb, dvs. med höga krav och låg kontroll (64 %). Anställda med iso-spända jobb, dvs. med lågt stöd dessutom, var mer stressade (61 %) och hade dålig hälsa (35 %) jämför med andra typer av jobb. Höga krav på jobbet tillsammans med lågt socialt stöd var relaterat till stress. Höga krav tillsammans med låg kontroll var relaterat till negativ hälsa. Aktiva jobb (OR=6,79), dålig hälsa (OR=5,14), att vara missnöjd med arbetet (OR=4,61), avsaknad av arbetserfarenhet (OR=3,6), avsaknad av stöd (OR=3,02) och låga krav (OR=4,2) visade sig vara viktiga arbetsrelaterade prediktorer för stress.

Nyckelord:

Stress, hälsa, yrkesrelaterad och sociodemografiska karakteristika, Krav/Kontroll/Stöd modell.

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1. Introduction

The World Health Organization (WHO) defines *health as a state of physical, mental and social well-being, not just the absence of injury or disease* (WHO, 2004).

This statement leads directly to a human system framework for conceptualising individual's health. Nowadays the health of employees in many workplaces became one of the most controversial issues, and employees have become more conscious of the negative effects of stress experienced at work. According to WHO report "*The Solid Facts- social determinants of health*" (2003), stress at work generally is identified as one of the ten key determinants of poor health. These facts highlight the importance and understanding of workplace factors influencing employee's health.

Occupational stress nowadays is seen as a growing problem which is discussed more and more in the media. One of the reasons is that costs of stress aroused from work environments that resulted in substantial costs to work organizations and to individual employees in the whole world (Andersson, Sinaugil et al, 2002). It is known that unhealthy work organizations can create very big financial costs. As an example, United States (US) industry loses approximately 550 million working days each year because of absenteeism. Cooper (1994) points out that 54 percent of absences are in some way stress-related that is, created by an unhealthy work environment. Another example, mentioned by Karasek and Teorell (1990) concerning financial costs is that the collective cost of stress in 1980's to US organizations for absenteeism, reduced productivity, compensation claims, health insurance and direct medical expenses has been estimated at approximately 150 billion dollars per year and apparently it is likely to get worse for the next millennium.

Another reason why occupational stress became such an important issue to the public health and workplace organizations is because it's adversely impacts to the workforce (Axelsson, Vanagas, 2004). WHO (2003) reports, that occupational stress plays an important role in contributing to the large social status differences in health, sickness absence and premature death (WHO, 2003). Talking about occupational stress it is important to overview the costs of stress at individual and organizational level. Cox (2000) notices, that experience of stress at work and its undesirable consequences for the health of individuals as well as for the health of organizations they work in became a concern in working world. Khuwaja et al (2004) explains the reason that at the individual level high level of work-related stress is seen as threat to mental and physical health, quality of life, and personal development. Whereas, at organizational level high level of stress in a workplace might lead to increased absenteeism, conflict and turnover, and reduced quality and quantity of work.

According to Andersson, Sinaugil et al (2002), the rising issue of occupational stress places a premium on being able to understand the causes and consequences of work-related stress, so that it would be possible to develop appropriate policies and practices to deal with work-related stress. As an example, Cartwright (1997) tries to explain the causes of occupational stress. She sees that the primary causes of stress are the fundamentals of change, lack of control, high workload and unprecedented demands. These facts arises various concerns about what effect this change is having on the well-being and health of employees and their work organizations. For

some employees the changing nature of work has led them to greater mobility and more flexible work arrangements, for others it have increased work demands. These changes, in 1990s, have been associated with different aspects such as rapid technological change, increased competitiveness and improved customer service in many work organizations. Andersson, Sinaugil et al (2002) predict that the climate of continual change could in a future create the type of work organizations that will produce enormous levels of occupational stress.

There is a strong belief that stress at work has a damaging effect on health and well being of employees (Kuper, Marmot, 2003). In relation to that many various models have been developed to explain how the worker and job environment interact to produce stress. The most widely cited of these models is the Karasek-Theorell (1990) job strain model. This model has the two central components that are high job demands (the need to work quickly and hard) and low decision latitude (lack of control over skill use and organisational decisions (Karasek-Theorell, 1990). Karasek's Demand – Control theory imply that employees in high strain jobs (high demands and low control) experience the highest levels of stress, and employees in low strain jobs (where demands were low and control high) is least stressed. The Demand-Control-Support model assumes that job strain is a result of the interaction of three job dimensions: not only demands and control but also social support, where the highest strain arises in a work environment when demands are high, control - low and social support – low (Karasek and Theorell, 1990).

The importance of many studies and research made in occupational stress field is that it can help future research by monitoring the situation in working environment. For example, other researchers can follow if there have been any changes, what kind, learn from others mistakes, improve, implement and make new decisions and policies. Both of Karasek's models (Demand/Control and Demand/Control/Support) were tested in many studies. There are several studies, which have attempted to apply the D-C and/or the D-C-S models to work. For example, in a study by Jones (2001) reported increased stress levels were found to be associated with high job demands and low job control. Niezborala et al (2003) presented some findings in their study, where lower occupational status and educational level were associated with greater lack of job control and rewards, higher physical stress, but lower psychological demands. Study by Chang (2000) presented in International Conference in Tokyo, documented that social support modified the relationship between the levels of psychosocial well-being and job strain. Lithuanian job strain studies carried out by Axelsson, Vanagas (2004) presented the idea that socio-demographic factors have an impact on job strain development. Age, gender and marital status are the determinants of job strain.

These findings suggest that social –demographic (gender, age, education, social class and marital status) and work characteristics (demands, control, support) affect employee's health as well as work-related stress development.

Stress in a Hotel industry

According to Blædel et al (2004) the hotel industry is generally seen as a sector whose working environment involves many stresses and strains. European Foundation for the Improvement of Living and Working Conditions implies that hotel industry is identified as one out of seven sectors that is exposed to a high risk of work-related stress (Houtman, 2005).

Regarding occupational factors with potential significance for health, a large number have been suggested by Kristensen et al. (2002). Stressful working conditions influencing employees well-being arises from hard deadlines, unexpected interactions with guests, long working hours and night and evening work, repetitive work, high emotional demands, low influence (control), shift work, high work pace, long working hours, problems with coordination of work (Kristensen et al., 2002). COEH (2002) researchers studied health problems among hotel employees and their findings suggest that physical workload, time pressure, low job control, high psychological demands, and high job stress all increase the risk of ill health or severe pain in hotel employees. In addition, International Labour Organization (ILO) states that the health status of workers in the hospitality industry is worse than that of the average population, especially concerning mental health. According to the New Warren Shepell research group Report (2003), hospitality employees report greater stress and depression symptoms than employees in other sectors. Consequently, Scherzer et al. (2005) noticed that excessive morbidity has been reported frequently among various groups of employees in hotel industry. More people in the hospitality industry than in the general population feel they have poor general health.

Many specific health problems have been associated with some of the professions in the industry (Scherzer et al., 2005); nevertheless a broad picture of the health status and stress levels causing health problems of the employees is missing.

Apparently, some examples indicated that work-related stress can be seen as a factor causing disease and ill health in hotel employees what places an importance of identification of factors causing workplace stress reactions and stressful experiences. Various work-related factors should be analysed in order to identify if there is a problem of work-related stress. Weiler A. (2004/2005) notices that an identification of various factors related and responsible for workplace stress and its management at its primary level could have long term benefits both for employee and employer.

Aims and research questions of the study

Aims:

To explore the level of work-related stress and identify relationships between work-related, social and socio-demographic characteristics in relation to stress and health status among hotel employees in Malmö.

Main research questions:

- a) To examine the level of work-related stress experienced by hotels staff;
- b) What is the prevalence of work-related stress regarding the socio-demographic characteristics of hotel employees?
- b) What characteristics can be associated with work-related stress among hotel employees?
- c) To examine what types of jobs using Karasek's DC model are associated with work-related stress and health status among hotel employees?

Background

Stress theories

The definition of stress has been used widely and comprehended in several fundamentally different ways (Nelson, 2002). In place of general theory, Hancock and Desmond (2001) offer two key insights: first, that stress should be studied and understood through multidimensional point of view and second, that stress should be seen as a dynamic phenomenon.

Stress has been considered as an environmental condition and a form of response to it and could be understood as a form of relationship between environmental demands and a person's abilities to meet these demands. Orth-Gomer (1994) notes, that latest developments of the working life in the industrialized world influence that physical stress tend to be replaced by mental stress.

Definitions of stress can relate to either the stressor or stressful situation or the stress response. One of the first scientific attempts to explain stress was made by Hans Selye in 1946 (Cartwright, 1994). Selye (1984) defined stress as:

The non-specific response of the body to any demand created upon it. The demand can be a threat, a challenge or any kind of change which requires the body to adapt or mobilize the energy.

Cambell and Tetric (2002) notice that this definition implies that stress is a natural and healthy reaction in all situations that require increased energy. This way of defining stress it is not negative in itself, although it may become negative during certain conditions. Van Onciul (1996) acknowledges that the outcome of a stressor depends on whether the individual perceives the situation as stressful, and whether he or she can cope with the situation. One of the examples how individuals react to stress could be described by General Adaptation Syndrome (GAS) created by Selye (1984). The GAS consists of three stages:

- 1) *the alarm reaction;*
- 2) *the stage of resistance;*
- 3) *the stage of exhaustion (Selye, 1984, p.38)*

According to the General Adaptation Syndrome after a stage of shock where the level of functioning is reduced, the individual enters the second stage, the stage of resistance. During the stage of resistance, performance level is far above normal functioning. The stress experienced during resistance stage is called “eustress”, positive stress (Selye, 1984; Cooper, Payne, 1995). According to Axelsson, Vanagas(2005), work can be an exiting source of challenge, where potentials and capabilities of the self are discovered and utilized, what is an example of positive stress. Nevertheless, work is more commonly indicated as one of the most universal and intense kinds of “distress”, a negative form of stress. Many employees at workplace perform well under pressure and achieve goals. When the stressors continue for a certain long time of period and there is no time to rest from them, then the third stage of the stress cycle “exhaustion” stage appears. Cooper and Payne (1995) note, that this stage results in “distress”, which if left unattended, can lead to physical and mental illness. By progressing through these stages, the normal physiological response may turn into pathological. Sauter and Murphy (1995) indicate that this negative or pathological stress influences person’s physical and emotional well-being. Cartwright (1997) notice, that Selye’s theory of stress ignores the psychological impact of stress on an individual.

Newer theories of stress show the interaction between a person and his/her environment. In the 1970’s, it was suggested by Lazarus and Folkman (1984) that the individual’s stress reaction depends on how the person experience and interprets the importance of a harmful, threatening or challenging situation. Lazarus and Folkman (1984) work disagrees with others who see stress simply as environmental pressure. Instead, the intensity of the stress experience is determined significantly by how well a person feels and can cope with an identified threat. The idea of looking at stress as either environmental pressures or as psychological responses was rejected by Cox (2000). He and his fellow researchers suggested that stress can be best understood as a part of a complex and dynamic system of transaction between the person and his or her environment.

Hancock and Desmond (2001) notice that most stress researchers have accepted the view of Lazarus and Folkman (1984) that stress is a quality of transactions between person and environmental demands including the individual’s perceptions, expectations, and interpretations and coping responses

Workplace stress

Work environment became one of the most important sources of psychological stress. International Labour Organization (ILO) states that according to the Third European Survey on Working Conditions, work is the main cause of stress for over one-third of employees in Europe. One of the reasons why work related stress became very important issue to the public health community and working people is because it's adversely impacts to the workforce. Orth-Gomer (1994) notices, that the fact that different aspects of working life can produce stresses and stress reactions has become increasingly evident.

Theory and research on occupational stress imply that work should be challenging but not over demanding. According to Cambell and Tetric, "it should provide variability but also control; role expectations should be reasonably clear and not overly conflicting; work should not be overly demanding in terms of speed, time, or environmental and ergonomic conditions" (2002, p.326). Unfortunately often it is not possible to obtain. On the other hand, Throwbridge (in Drenth et al, 1998) implies that stress is seen as a normal phenomenon in organizations. It is normal and inevitable part of daily work life for employees to experience some degree of stress, but this does not necessarily mean that they are experiencing stress (Anderson et al, 2002). For a healthy and satisfying life, a certain degree of tension is essential. A certain tension or disagreement between job demands and the available skills and means (personal, material and social) are associated with a relatively high level of welfare.

The problems may appear where the level of such tension is too high or too low (Throwbridge et al in Drenth et al., 1998).

Different approaches of workplace stress

It is generally accepted nowadays that occupational stress can be adequately explored only by taking a multidisciplinary approach. This approach investigates a combination of psychological, sociological, and physiological problems that pressure or load individuals (Nelson, Burke, 2002). There have been theories in work related stress that try to explain the cause of stress appearance. Von Onciul (1996) believes the reason lies in a disturbance in the balance between physical and mental activity which have come from a change of work environment. She sees the modern workplace as being stressful and characterised by, "lack of time, more uncontrollable factors... general uncertainty and more administrative work." (p.17).

According to Dollard (2001), there are many varied definitions of workplace stress. Sauter and Murphy (1995) refer to workplace stress as:

"the intervening psycho physiological variable between workplace factors and individual physical and emotional health" (p. 19)

In 1999 the United States National Institute for Occupational Health and Safety (NIOSH) generally described job stress as:

"the harmful emotional and physical responses that occur when the requirements of the job do not match the needs, capabilities and recourses of the worker" (NIOSH, 1999)

Work-related stress can also be seen as a result of a conflict between the role and needs of the individual employee and organizational, personal or other factors in the workplace (Vanagas, 2005). Anderson et al (2002) state that “stress occurs when there is a state of disequilibrium between employee well-being, work experiences, coping processes, and enduring personal and organizational characteristics, provided that this state of disequilibrium brings about change, either positively or negatively, in the employee’s normal levels of well-being “(p. 108). According to Cox (2000), work related stress occurs when a person realizes that he or she is unable to cope with demands placed at work and might experience discomfort.

According to Anderson et al (2002), the work related stressors and strain approach is based on a relatively simplistic theory that views stress as occurring when work characteristics contribute to poor psychological or physical health. According to this approach, stressors refer to the work related characteristics that give rise to stress; strain refers to an employee’s psychological and physiological response to stress. Groups of employees who are exposed to stressors at work are called risk groups for work stress (Cooper, 2001). In other words, Cooper (1998) implies that stressors - physiologic, psychological and behavioural mechanisms when activated can lead to stress-related decrease in well-being, satisfaction and quality of life. Von Onciul (1996) notes, that the effects of work-related stress might result in a reduction in productivity in combination with a number of emotional and/or physical symptoms depending on duration of exposure of stress at work as well as the type of occupation and individual personality traits.

In conclusion the main interest lies in the presumed causal relationship between stressors and strain. Work-related stress can be explained as the consequence of diversity of work demands that differ from one person to another, from one organization to another on one side, and the available social support, personal skills, physical characteristics and social environmental characteristics on the other (Throwbridge et al. in Drenth et al., 1998).

Socio-demographic characteristics and stress

Organizational culture includes values about the style of work and how employees manage stress. Different organizations, and different jobs, demand different styles of stress response. According to Sauter and Murphy (1995), *stress* is not an objective phenomenon, because different people experience and perceive organizational conditions differently. In addition, because of personal style and history, people respond differently to organizational pressure. Some people experience more stress and therefore more stress-related problems, than others (Sauter, Murphy, 1995). Jones and Briggitt (2001) note, that certain individuals are more ‘stress-prone’ and therefore more vulnerable than others. Axelsson , Vanagas (2004) suggest that it should be recognized that *stressors* may occur also because of individual characteristics of the employee as well as the work environment. It is possible that one and the same stressor can be very differently perceived and dealt with by different individuals. One person can be strongly affected by any stressor, when another may be hardly affected at all (Orth-Gomer, 1994). According to Axelsson et al (2004), individual responses to stressful situations can vary greatly and that certain people are more likely to experience high levels of stress in their jobs than others.

There are some key individual differences, such as e.g. age, gender, education, social status and etc. that have been implicated in the relationship between stressors and strains (Sauter, Murphy, 1995) According to Dollard (2001) these differences seem to influence people's reactions to stress. Many of individual differences have been investigated in relation to stress. They fit into two broad categories:

- genetic (gender, age);
- acquired (social class, education, social support, job position, marital status);

Gender

Jones and Briggth (2001) note, that one variable normally considered to have a direct effect on the level of strain is gender. Lazarus and Folkman (1984) pointed out gender differences in the experience of stress. They notice that women were more likely to report stressful situations from health-related concerns and men were more likely to report stressful situations at work. Bright (2001) refers to some studies that tend to show that women report more strain symptoms and engage in more health-related behaviours (e.g. visits to clinicians, general practitioners). Jone and Briggth (2001) in their literature refer to the Whitehall Study (a large-scale longitudinal epidemiological study of London based Civil Servants) that reported significantly higher rates of psychological distress in women than in men. Dollard (2001) explain that women are thought to be at greater risk for work stress because of the double demands of work and home. He also notes that men are more likely than women to have high control over their work process. Bodil (1992) refer to a survey of men and women employed full-time that revealed gender differences: women reported higher levels of workload, stress and conflict than did men.

According to Bright (2001) not all studies reveal clear gender differences. Reviewing stress research in organizations, Nelson and Burke (2002), refer to some researchers that have found little or no evidence of gender influences in perception of work-related stress. Nevertheless, it is not clear whether it is the biological sex of the person that influences strain responses or a complicated set of environmental stimuli. As example, Bright (2001) mentions social learning, coping strategies, work patterns, social norms of behaviour and power imbalances between men and women that may contribute to these differences. However, whether any reliable differences between the sexes exist, after many other personal factors have been taken into account, has yet to be determined adequately.

Age

Jones and Briggth (2001) note, that age is another individual difference factor which may be implicated in work-related stress perception. According to Bright (2001), a distinction is often drawn between an individual's chronological and physiological age. Chronological age can be related to the type of stressors the individual is exposed to, while physiological age can be related to the consequence or outcome of exposure to such stressors. Chronological and physiological age is both related to an individual's overall health status, what shows that physically solid individuals appear to cope better with stressors than physically weaker individuals. However, an

individual's physical status is likely to be affected by non-biological factors as well such as previous medical history, personal habits and socio-economic status (Jones and Brigght, 2001). Bright (2001) refers to some research findings by Wall et al (1997) on the relationship between age and ill health that show that younger respondents were in better general psychological health than their older counterparts. The middle-aged workers reported lower levels of job-related enthusiasm and contentment than younger or older workers. Axelsson, Vanagas (2004) refer to some studies that highlighted the possibility that there can be age differences in job strain perception as well. Those studies (among GP) showed that as a result of the age interaction, the total effects on job strain are larger among old persons to compare to young persons and the age impact on job strain increases in older age groups.

Education

According to Bright (2001), while some individual difference factors (such as gender) are determined by genetic factors, many are required over time. Jones and Brigght (2001) describe such factors as education or financial assets, social supports or various coping strategies that individuals may develop to deal with stressors. However education may influence the reporting of strain outcomes. Jones and Brigght (2001) refer to a national survey conducted in the USA which found that men with higher levels of education were more likely to express reactions to environmental stressors in psychological terms, whereas those of a lower educational status defined these judgements more in terms of physical symptoms.

Social class and occupation

Cooper and Payne (1995) state that occupation and social class are closely related. Job Stress Network implies that the impact of adverse work organization exposure also varies by social class. According to Dollard (2001), socio-economic status has a well known link to health. Wilkinson (1997) asserts that lower socio-economic status is associated with poorer physical health and higher mortality. Bright (2001) notes, those large-scale studies investigating occupational stressors and health outcomes usually take such variables into account as they may well be confounded with occupational stressors. People think that stress mostly affects those in positions of responsibility, such as managers and senior executives. It is true that these positions can be stressful, but the people who suffer most from stress are those with the least control over the way their work is done (Karasek and Theorell, 1990). Burrow (2003) states that a lack of control over work, and the stress it creates, can make people sick. For example, those in lower socio-economic groupings are likely to have jobs with less control, a job characteristic which is considered to be implicated in heart diseases (Bright, 2001).

According to Marmot et al (2000), in industrialized countries mortality and morbidity trends follow a surprisingly consistent pattern: they are higher in lower socio-economic grades. Statistics from a number of countries indicates that there are more deaths and more illness in the working population among blue collar and unskilled workers than among white collar and professional groups (Cooper and Payne, 1995). Orth-Gomer (1994) notes that this is true whether occupational class, educational level, income or material aspects are used as indicators of socio-economic status. Marmot et al (2000) discussed the possible explanations of the social gradient in health, using the Whitehall studies of British civil servants as an example. "Whitehall Study" has

confirmed that our health is related to our position in sociality. The study found senior executives suffer less health effects than middle management, who in turn suffers less than workers in clerical positions. There was an increase in ill health with every step down the social structure. Marmot et al (2000) assert that several psychological factors varied according to social gradient: work strains, lack of control over work, lack of social support were more common in lower social grades. Thus these factors offer additional explanations for the social gradient in health. In line with the Demand/Control/Support model, Andersson (1999) refers to Brisson et al (1996) who studied whether or not white-collar workers with high strain jobs, developed more psychological distress than workers not exposed to high strain. Their study confirmed that a combination of high demand and low control was related to stress. For example, Job Stress Network refer to a number of studies which have shown that the impact of high strain jobs (high demand/low control jobs) and iso-strain (high demand/low control/low social support jobs) was greater for individuals in working class occupations compared to those in managerial/professional jobs. Cooper and Payne (1995) acknowledge that the Karasek's two-dimensional view of occupational stress provides a basis for understanding some of the major differences between blue and white collar occupation.

Social factors (physical activity, satisfaction, spare time activity)

There may be other factors or sources of work-related stress that lie not in a workplace itself but in other areas of life as well. One of the factors of psychological strain in the workplace is identified by Dollard (2001). Dollard (2002) states that work-related stress can be defined as the combination of high levels of psychological strain and low levels of job satisfaction. He as well asserts the negative impact of stress and the positive impact of job satisfaction on job performance and organisational productivity. These statements highlight the importance of satisfaction at work for employees in any workplace. Karasek (1979) as well agrees that cognitive effects such as satisfaction at work contribute to the occupational stress perception. As example, he identifies in his early studies that stressful work characteristics, which are the combination of low control and high job demands can be associated with stress as well as with job dissatisfaction (Karasek, 1979). Karasek (1990) adds that those kind of jobs lead to physical and psychological symptoms instead of enabling experience of satisfaction with work. Drenth et al. (1998) identifies that family, relations with friends and acquaintances as well can play a significant role when talking about work-related stress.

Exercise or a lack of it is another factor that might play a significant role in occupational stress perception. Whitehall II study shows that exercise is good for health in many aspects. Research suggests that moderate intensity activity is not as effective as vigorous activity. Kiwimaki et al, (2005) proposes that high work stress could decrease physical activity but the evidence of the relationship has remained equivocal. The findings from Kiwimaki et al (2005) suggested an independent, though weak association between work stress and lower leisure-time physical activity. WHO (2003) on the other hand mentions, that although the stresses of modern urban life rarely demand intense or even moderate physical activity, stress response diverts energy and resources away from many physiological processes important for long-term health maintenance (WHO, 2003).

An importance of social life outside work and its effect on occupational stress and health state can't be overlooked as well. Marmot et al. (2000) in Whitehall II Study found that active membership in groups is associated with better overall health. As yet, it is not clear whether certain groups are more health promoting than others, but it seems that social participation is good for general health. Cooper (1998) refers to Karasek's early epidemiological studies where active work (high demands and high control) situations were associated with active leisure activities. Cooper (1998) as well notes that there is a theory which states that an active and challenging job stimulates active leisure. For instance, research in both Swedish and American populations has shown workers in active jobs to be the most active in leisure and popular activity outside of work, in spite of heavy work demands (Karasek and Theorell, 1990; Cambel and Tetric, 2002). These findings highlight the positive role of leisure activity on stress perception. Importance of social life's factors implies that identification of those could serve for the better purpose for employees concerning their work-related stress perception.

The Demand/Control Model

It is important to establish the impact of environmental and work-related factors in order to understand socio-demographic differences in stress perception discussed in chapters above. Work stress theories attempt to describe, explain and predict stress according to a coherent set of hypotheses. Interaction models explain work stress in terms of the individual's interaction with the work environment (Cooper, 1998). Stan and Van der Doef (1999), Jones and Brigght (2001) acknowledge that one of the most well known and influential models in research on the relationship between work and health is the Job Demand –Control (JDC) model. This model, also known as the job strain model, was originally developed by Karasek in 1979. Lange et al. (2004) state that models such as the JDCS model focus on specific aspects in the complex psychological work environment to explain how individuals perceive and react to their job. According to Karasek (1979) model of work stress emphasises social determinants of mental health at work. This model provides the basis for studies of the interaction between different environmental factors (Orth-Gomer, 1994). According to Karasek and Theorell (1990), work stress arises primarily from the structural or organisational aspects of the work environment rather than from personal attributes or demographics. Dollard and Winefield (2002) refer to Karasek and Theorell who in 1981 argued that

“strain results from the joint effects of the demands of the work situation (stressors) and environmental moderators of stress, particularly the range of decision-making freedom (control) available to the worker facing those demands” (p.,8).

Components of Demand/Control Model

The JDC model focuses on two dimensions of the work environment and identifies two crucial job aspects in the work situation: *job demands and job control* (Karasek, 1979; Karasek and Theorell, 1990).

Job demands are the amount of effort and attention required to carry out one's job (Searle et al, 1999) According to Maes, Van der Doef (1999), job demands refer to the work load, and have

been operationalised mainly in terms of time pressure and role conflict. Keita and Hurrell (1994) add that psychological job demands include such factors as deadline distress and conflicting demands. *Job control*, which is sometimes called decision latitude, refers to the person's ability to control his or her work activities. Control includes two components: skill discretion and decision authority. According to Cooper (1998), decision authority is related to the potential that employee has in deciding about his or her own work, while skill discretion is related to the individual's control over the use of his or her own skills and the development of these. Keita and Hurrell (1994) refers to the job strain model as the one which sorts workers into quadrant on the basis of the level of psychological job demands and control they experience. In the JDC model it is assumed that specific kinds of job factors or combinations of these factors (later on mentioned as job types in this study) have specific job stress consequences. Karasek predicted that jobs with higher demands were more stressful than jobs with lower demands, and that jobs with less control were more stressful than jobs with more control (Karasek and Theorell, 1990). The JDC(S) model states that demands and stresses at work are even more noxious, if they are combined with lack of control (Karasek and Theorell, 1990). Strain is understood to result for people with objective high job demand and objective low control over their work, irrespective of individual differences in appraisal or coping (Karasek, 1979).

Demand/Control Model's hypothesis

In the Demand-Control model two mechanisms are proposed: the strain mechanism and the active learning mechanism, where both of these mechanisms depend on the combination of the same causal variables: psychological job demands and job control (Karasek and Theorell, 1990). According to the model, having decision latitude over the work process will reduce worker's stress but increase learning, whereas psychological demands increase learning as well as stress. These two mechanisms are represented by the diagonals in figure 1. *The 'strain' hypothesis* states that the most adverse reactions of psychological strain and physical illness are expected in a 'high-strain' job that is the high demands- low control job (Karasek and Theorell, 1990). On the other hand, according to Karasek (1990), following the 'learning' diagonal, a second hypothesis states that high demands in combination with high control can lead to increased learning, motivation and development of skills, whereas where they are low, skills can atrophy. According to Keita and Hurrell (1994), most of the research using the job strain model has assessed the first hypothesis, not the second.

Besides the 'strain' hypothesis, another hypothesis has been examined in research applying the JDC model to health and well-being. According to this *hypothesis control can buffer* the potentially negative effects of high demands on health and well-being. Beehr (1995) notes that buffering is usually defined as a finding of a more positive relationship between stressors and strains. Karasek himself examined this interactive effect of demands and control (Karasek and Theorell, 1990).

In conclusion, the strain' hypothesis focuses on whether the most negative outcomes are found in employees in the high-strain situation. The 'buffer' hypothesis, however, predicts an interactive effect of demands and control, in which control moderates the effects of demands on the outcome. According to Maes and Van der Doef (1999), the two hypotheses are not mutually exclusive. The buffer hypothesis can be interpreted as a specification of the strain hypothesis.

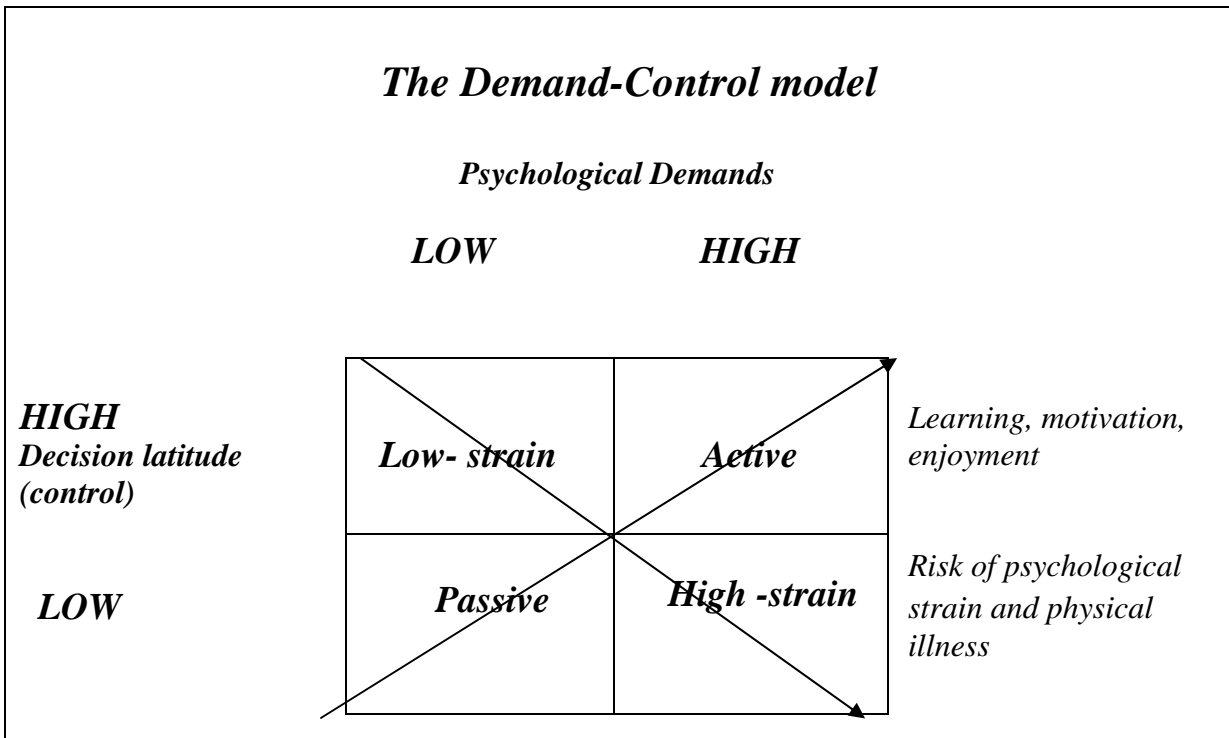


Figure 1. The Job-Demand-Control model (adapted from Karasek, 1990, p.32).

Job Types According to Job Demand/Control Model

Karasek and Theorell (1990) have proposed a set of interacting psychosocial factors associated with work that has a significant influence on the productivity and health of workers. The primary factors are psychological demands and decision latitude (control). Four different kinds of psychological work experience are generated by the interactions of high and low levels of psychological demands and decision latitude:

- ***low strain*** - (*low demand and high control*);
- ***active*** - (*high demand and high control*);
- ***passive*** - (*low demand and low control*);
- ***and high strain*** - (*high demand and low control*);

According to Karasek and Theorell (1990), the most adverse reactions of psychological strain, the most stress symptoms and reported the highest level of stress related illness occur when the demands at work are high and the worker's decision latitude is low. These types of jobs are identified as the "**high strain**" jobs that have high level of responsibility without authority. The implied model of the *high-strain* situations is that the energy is transformed into damaging, unused strain because of an environmentally based constraint on the person's optimal response

(Karasek and Theorell, 1990). Sauter and Murphy (1995) note that high strain jobs have the most negative consequences for workers.

Some of the most challenging situations call for the highest level of performance, but without negative psychological strain. Karasek (1990) calls this kind of job, in which control is high and psychological demand is also high, the *active job*. These jobs call for the highest performance and leads to high participation. Cambel and Tetric (2002) notice, that the JDCS model suggests that the “best” job is an active job. According to Cooper and Payne (1995), these jobs produce the reasonably high stress levels and high levels of social activity.

For the employees in *low-strain jobs* (situations with few psychological demands and high levels of control) Karasek and Theorell (1990) predict lower than average level of psychological strain and risk of illness. The reason is that decision latitude allows the individual to respond to each challenge optimally, and because there are relatively few challenge to begin with. According to Cooper and Payne (1995), low-strain jobs produce the lowest levels of stress symptoms but the risk is that with insufficient stimulation people can loose interest in work activities and lessen their opportunities for controlling what is happening at the workplace.

For the *passive jobs*, that represent situations with low demand and low control, Karasek and Theorell (1990) predict only an average level of psychological strain and illness risks. The employees in passive jobs have no possibilities of controlling or influencing the source of events. Karasek (1990) state that “although each stressor exposure would result in substantial psychological strain (just as in the high-strain circumstances), the low demands of this work situation mean that fewer stressors are confronted” (p.38). In addition to this, Cooper (1998) observe, that the combination of low demands and small decision latitude, i.e. a passive situation, is associated with loss of skill and atrophy of coping skills and it can also lead to passivity and boredom (Cooper, 1998; Cooper and Payne, 1995). Cambell and Tetric (2002) add that this combination can as well result in reduced ability to solve problems and tackle challenges and feelings of depression.

Role of Support in a Demand/Control Model

In the 1980s the JDC model evolved and expanded from its focus on the individual to the interaction between individuals. Social support was added to the original D/C model because of its possible influence on health and its importance to the work environment. According to Karasek and Theorell (1990), Beehr (1995), the support of co-workers and supervisors may be one of the most important factors ameliorating stress in the working environment. Theorell (1994) states that it is convincible that social support to some degree can be protective against the negative effects of stress at work. Searle et al (1999), Sauter (1995) noticed that a lack of support is an important stressor, thus people who receive less advice, information, practical support are likely to experience higher levels of stress.

It is suggested by Orth-Gomer (1994) that the individual’s differences in stress perception have to do with the help and support that we get from people in our environment.

The above-mentioned distinction between the ‘strain’ hypothesis and the ‘buffer’ hypothesis can also be applied to the expanded version of the model, the Job Demand- Control-Support model.

Cooper (1998) asserts that *social support* from superiors and work-colleagues could *serve as a buffer* against the combination of high demands and low decision latitude and according to Beehr (1995), Orth-Gomer (1994) to protect the person from the experience of stress. For instance, to get feedback helps us to recognize problems and find solutions for successful coping with difficult situations at work (Orth-Gomer, 1994). Generalizing, the buffer hypothesis of the JDCA model states that social support moderates the negative impact of high strain on well-being (Karasek, 1979).

On the other hand the lack of support can be seen as a negative aspect of work environment, which can be explained by *iso-strain hypothesis* of the JDCA model. In iso-strain hypothesis jobs characterized by high demands, low control, and low support (or isolation) is considered to be the most noxious work situation (Maes, Van der Doef, 1999). The iso-strain hypothesis predicts the most negative outcomes among workers in an iso-strain job. Cooper (1998) refers to Johnson, who stated that iso-strain is the worst combination, which carries the highest risk and would have the most adverse health consequences. Andersson (1999) refers to some recent research which showed that social support at high strain jobs and mental health are related. The research showed as well that those workers that had social support from their immediate superior, or had a strong network at the workplace had lower values of mental strain than their colleagues who lacked social support (Andersson, 1999). Dollard (2001) refers to Johnson and Hall (1988) who stated that jobs with high demands, low control, and low support from supervisors or co-workers (DCS model) carry the highest risk for psychological or physical disorders (high strain-isolated jobs).

Evidence of Health Outcomes

“Stress can lead to poor health” (NIOSH, 1999).

Karasek and Theorell (1990) implied that health may be affected by job strain. Axellson, Vanagas (2004) adds that there are a lot of controversies about the epidemiology of job strain in a media, but there is also an agreement about it as a complex phenomenon related to health. International Labour Office (ILO) described that job stress was one of major causes of work-related health problems in the 20 century. In addition, WHO (2003) states that stress in the workplace increases the risk of disease. It is impossible to determine the number of workers experiencing symptoms from work-related stress. Cambell and Tetric (2002) refer to results of 1990 Gallop poll which indicated that nearly 50 percent of all Americans say that job stress affects their health, personal relationships, or job performance.

According to Dollard (2001), evidence for the health effects from work-related stress comes from a number of studies, particularly those tests of the main dimensions of a key model of work stress: the job Demand/Control model. This model has proven useful in explaining some of the socio-economic differences in health and disease. Many workplaces, including hotel industry and various occupations within involve high demands. Nevertheless, not demands themselves that are the major cause of high stress or health problems. Karasek and Theorell (1990) propose that a combination of high levels of psychological demands and low levels of decision latitude are the major issue of various concerns. According to Houtman (in Cooper (2001)), the higher the demands or the lower the decision latitude (high strain situation) imposed on the employee, the

greater the stress-related health risk. Cambel and Tetric (2002) agrees that high strain situations are risk factors for poor mental and physical health. Houtman (in Cooper (2001) adds that the model has been shown to have predictive value for psychological dysfunction and depressive disorders, as well as for absenteeism, use of medication, other health behaviours, cardiovascular disease and even musculoskeletal problems. According to Theorell and Karasek (1990), approximately 80 percent of the different published epidemiological studies have indicated that there is a clear relationship between low decision latitude and coronary heart disease risk. Cooper (1998) adds that high psychological demands and low support may contribute to this risk. Kivimäki et al (2002) have proved that jobs that characterise from high demand and low control, called high-strain relation, has been related to cardiovascular diseases. Despite the high demand level in the active jobs, adverse health consequences are not as likely as in the high strain jobs because the high decision latitude increases the possibility for the individual to handle the demands (Cambel and Tetric, 2002). Kiwimaki et al (2005) also investigated the association between work-characteristics, work stress and smoking. He found that higher intensity of smoking was associated with higher job strain and smoking intensity was also higher in active and passive jobs.

WHO (2003) reports that people who have more control over their work have better health. Job stress may produce overt psychological and physiologic disability; however, Azian et al (2004) add that it may also have more subtle effects on personal well-being and productivity. Marmot et al (2000), notice that the well known 'Whitehall Study' which measured the effects of work characteristics including decision latitude (control), job demands and level of social support at work, found that unequal work leads to unequal health outcomes. Work characteristics despite of other independent work- related risk factors found to be associated:

- *low decision latitude* (little control) with poor mental health, alcohol dependence, poor health functioning, increased sickness absence;
- *high job demands* with poor mental health and poor health functioning;
- *low social support* at work with poor mental health and poor health functioning as well (Marmot et al, 2000);

Exposure to stressors and stressful situations at work does not necessarily cause health problems in all people. While the experience may significantly affect well-being at the time, it does not necessarily lead to the development of various health problems. When stress is prolonged it may affect health and reduce person's ability to cope (Jones et al, 2001).

3. Material and Methods

In this section I will present my choices of method selection, target group, study design, assessments of work characteristics, and descriptions of variables together with a short presentation of Ethical Committee approval.

Method selection

The survey was performed using a quantitative questionnaire method. Survey design is appropriate and meaningful to use in this case, because it takes a snapshot of what is happening, usually by asking people about it. According to Arnold et al (2005) the main aim of a survey usually is to gather quantitative information about certain phenomena (events, attitudes) from a large number of people. On occasions this will be done simply to ascertain the frequency of occurrence of a certain event, such as feeling stressed at work in this case. Questionnaires are often used to assess a person's attitudes, values, beliefs and experience (Arnold et al, 2005). According to Ejlertsson (1996), the advantage of doing a questionnaire study, is that a large amount of respondents can participate, that the questionnaires have the questions formulated in the same way for every participant, and the participants sit down in comfort and peace and fill in the information about themselves. In this study questionnaires were preferred in order to get a complete picture. A large group had to be asked to participate in order to get a clear picture. The questionnaires were anonymous, which was an important fact, so that the participants would feel free to answer honestly. In this study the structured questions were used, where a person had to select the most appropriate response from a choice of several. According to Arnold et al (2005), structured questions are easily the most commonly used research methods in work psychology. They have an advantage of providing large quantities of data with relatively little hassle of respondents for researchers.

Target group

The participants of this study were hotel employees in Malmö city, Sweden. Participants for this study were chosen by random selection. The criterion for systematic random selection was all the hotels in Malmö city that have minimum 50 rooms. The total number of hotels was 20. In this study participated 10 hotels that have 50 and more rooms. 250 questionnaires were handed out for all the employees in those hotels. After one reminder 130 questionnaires were returned. Total response rate was 52 %. 36 % of the respondents were male, 63 % were female and one person was unidentified.

Study design

Methodology in stress research can have various approaches depending on the purpose of the research (Houtman I. 2005). The purpose of the study was to identify prevalence and trends, as well as profile potential risks groups exposed to work-related stress of the employees in hotel industry. According to Houtman I. (2005), cross-sectional approach was appropriate regarding the purpose of the study. The hotel employee's exposure to work related psychological stress was assessed from self report via a questionnaire. Before the actual research started, the pilot study has been made in one of the hotels in Malmö (The Mayfair Hotel). The questionnaires were tested with 15 employees in different sectors of the workplace (reception, breakfast, cleaning department). Managers and middle management were involved as well. After questionnaires were successfully tested they were handed out in chosen hotels on convenience basis in autumn 2004. Participants were presented with the purpose of this particular study. They were also given

assurance of confidentiality and voluntariness through a covering letter with the questionnaire. A reminder was sent after 3 weeks to the hotels to assure the higher rate of respondents. The data was collected using the questionnaires that were completed by hotel employees. A 16 item questionnaire was constructed to gather data. The questionnaire was developed by using questions that were used in other studies in a field of stress in a workplace research.

The questionnaire included areas of:

- *socio-demographic characteristics;*
- *self-reported health status;*
- *perceived stress levels;*
- *work characteristics, using Karasek's (DCS) Demand-Control-Support model;*
- *general situation about leisure time, physical activity, satisfaction at work, with friends and family.*

Assessment of work characteristics

Work characteristics were investigated with Karasek's scale (Job Content Questionnaire). According to Siegrist (2004), this questionnaire has been widely used in international research both within and beyond Europe and has been psychometrically tested and prospectively validated in many studies. This instrument (Job Content Questionnaire) has three scales that measure stressful job characters: job control, job demands and social support at work. It is based on the model, also known as the "job strain" model. Indices of job demands, job control and social support were computed according to the formula as mean scores of appropriate subscales.

Job Demands (7a). The demand scale is the weighted sum of 6 items that measure the level of psychological demands at work. Standard measurement variability techniques (Cronbach's alpha between .65 and .90) was applied to the full set of items and confirmed a factor patterned consisting of 4 psychological job demands dimension. Psychological demands concern work demands in terms of quantity and speed as well as aspects of motional workload. Work demands were defined by items such as "I know what is expected of me in my work", "my work is physically demanding", "my work demands high concentration", "many people are depending on my work achievement", "if I need I can leave my work for short period of time", "I have time to do my work load without feeling stresses during ordinary working hours".

Job Control (8a). The control scale is the weighted sum of 6 items that measure the level of skill discretion and decision authority. Job control has to do with possibilities for workers influence on both the job level (autonomy) and the group level (participation). Job control was defined by items such as "I decide myself what should be performed in my work", "I decide myself when different tasks should be performed", "I decide myself how my work should be performed", "I

decide myself on my working pace”, “my work brings varying work tasks”, “I can learn new things in my workplace due to the opportunity for further training”.

Social Support (9a). The demand scale is the weighted sum of 6 items that measure the level of social support and helpful social interaction at work. Social support is compiled from two parallel series of questions for colleges and direct supervisor. Social support was defined by items such as “I get feedback on the job that I perform”, “we help each other when problems arise”, “we encourage each other at my workplace”, “it is a comely atmosphere (mood) at my workplace”, “I can get advice and support from my colleagues when I need it”, “I can get advice and support from my closest boss when I need it”.

A six point Likert scale was used with the coding from 6 to 1, so that the responses were summarized to give a score and the responses ranged from totally agree to totally disagree. The instrument is scored in such a way that the range for psychological job demands is 4-24, the range for control is 6-36 and the range for social support is 6-36.

Scales reliability was indicated by the “internal consistency” of scale items as measured by Chronbach’s alpha. For demands scale, which consisted of 4 items Cronbach’s alpha was 0, 21. In a control scale that consisted of 6 items, Cronbach’s alpha was 0, 77. In a support scale that consisted of 6 items, Cronbach’s alpha was 0, 88. Alpha values in the range between .65 and .90 are considered acceptable (Altman, 1991). Alpha values for control and support scales were acceptable, but for demand scale was rather low. Nevertheless, it was decided to use it in a further analysis for the purpose of creating four Karasek’s job types where demand, control and support are the main components.

In order to operationalize the interaction between job demands and job decision latitude that creates “*job strain*”, the most common procedure in studies has been to create a dichotomous “job strain” variable (also called the job strain “quadrant” definition). Study participants are classified as having “job strain” (or “high strain” jobs) if they are above the median or mean on demands and also below the median or mean on decision latitude. Such employees may be identified by dichotomizing self-reports of demands and latitude at either the medians or means of the study sample. According to this theory dichotomies for demand, control, support scales were defined by median split of the indexes of these scales yielding high and low values for each scale. “High demands”, “high control” and “high support” refer to the values strictly above the median, “low demands”, “low control” and “low support” refer to values strictly below the medians in each index. “High demands” were defined when the index was ≤ 15 ; “low demands” when index was > 16 . “High control” was defined when the index was ≤ 19 ; “low control” when index was > 20 . “High support” was defined when the index was ≤ 13 ; “low support” when index was > 14 .

Also responses to Karasek’s core questions were utilized to define four *job types*: low-demand and high control = “relaxed”(low strain); high demand and high control = “active”; low demand and low control = “passive” and high demand and low control = “high strain.” These four job types were compared against work-related stress and self-reported health status.

Iso-strain jobs were characterized using Karasek’s (1990) measure: high demands, low control, and low support (or isolation).

Self-reported Health status was measured in this study. One of the possible ways on how to measure subjective health status could be achieved by using a questionnaire with a single-item

question. This kind of question has been found to have good reliability and a high degree of construct validity. Self-rated health could be measured by using a continuum form of question from good to poor. According to Ejlertsson (2002), it is possible to catch the whole spectrum from good to poor subjective health by using one single- item question.

Measures and variables

Data collected on socio-demographic characteristics were age, gender, marital status, level of education, work position, work experience. All the variables of the questionnaire during the statistical analysis from the original answers were dichotomized according to the media for further analysis. Table 4 presents only the variables that were included in the logistic regression.

Age was measured in years. All participants were distributed into four age groups.

Marital status was put in to four categories: married/partner (sambo), living alone, divorced and widow/er.

Education level of the participants was categorized into: compulsory school, 2 years gymnasium, high public school, at least 3 years gymnasium, university without exam, university with exam. For further analysis education was put into three categories: compulsory school (2 years gymnasium/high public school); at least 3 years upper secondary school; university (university without exam/university with exam).

Concerning hotel employee's *work status* there was created 3 categories to define their occupational status: white collar with university degree, white collar without university degree and blue collar. For further analysis occupational status was put into two categories: white collar; blue collar.

With regard to the personal characteristics, social group is a characteristic that is allocated to a person in relation to his or her *profession and position*. There were 5 categories of job profession defined in respondent's answers: receptionists; housekeeping; managers, breakfast, sales department. For further analysis profession was put into three categories receptionists, service staff (housekeeping/breakfast staff) and middle management (managers/sales department).

Two questions concerning employee's experience at work were also included in a questionnaire. The answers to the question "For how long have you been working in a *hotel that you are working right now*" were categorized into 4 groups: less than ½ years, at least ½ years less than 2 years, at least 2 years less than 5 years, 5 years and more.

The answers to the question "For how long have you been totally working in a *hotel industry*" were dichotomized into 5 categories: less than ½ years, at least ½ less than 2 years, at least 2 years less than 5 years, at least 5 years less than 10 years, 10 years and more. One respond was missing.

Questions "How do you in *general* experience on your daily life the *demands* that are placed on you at your work", "How do you in *general* experience your possibilities on *self determination* in your workplace" and "How do you in *general* experience your possibilities on *support* in terms of advice, help, encouragement and feedback from your boss and your colleagues" referred to

perceived level of demands, control and social support in general. 5 point Likert Scale were used to measure the demands, control, support. The answers varied from 1-very high to 5- very low.

Self reported Level of Job stress was defined by using self-reported questions of 5 possibilities and was assessed by rating it on five point Likert Scale .Levels: yes, always stressed; yes, often stressed; sometimes; seldom; no, never. The final description of self reported level of job stress was defined by “negative/high stress” and “positive/low stress” levels, created by the media of original 5 answer possibilities. Negative/High stress level included answers: yes, always stress and yes, often stressed. Positive/Low stress level included answers: sometimes; seldom; and no, never.

In addition, employees were asked to identify the affect of *stress*, including stress at work and during spare time during the *last month*. The answers were measured using the scale were the responses ranged from having no stress to having a lot of stress. These answers ranged from 1 to 100 on an mm Visual Analog Scale (VAS) and were transformed into low and high stress level according to the media.

The question “*in which extend do you think you can compensate your stress at work with what you are doing on your spare time*” was categorized into 5 point Scale: in a very high degree; in a quite high degree; in a neither high nor low degree; in a quite low degree; in a very low degree.

Exercise level was measured and categorized into 6 categories: never; some times/ year; some times / month; regularly, one time / week; regularly, 2 times / week; regularly, 3 or more times / week. For further analysis exercise variable was put into two categories according to the media: regularly; seldom or never.

Activities (in any or some associations) were measured and categorized into 3 groups: no; yes, less then 6 times per month; yes, more then 6 times per month.

Level of satisfaction concerning a) spare time, b) work, c) and relationship with friends and acquaintance was defined by using self-reported questions of 5 possibilities and was assessed by rating it on five point Scale. Answers possibilities varied from: very satisfied to very unsatisfied.

Health status was measured by self reported answers which were categorized into 5 point Scale: very good; quite good; neither good nor bad; quite bad; very bad. The final description of self reported level of health was defined by “negative/ bad health” and “positive/good health” levels, created by the media of original 5 answer possibilities.

Statistical analysis

Statistical analysis was used in order to draw appropriate conclusions from quantitative data. The analysis included descriptive statistics (done using frequencies distributions), interrelation analysis (Pearson’s correlation) and logistic regression as useful tool to predict the presence or absence of a characteristic or outcome based on values of a set of predictor variables. Results differences at the $p = 0,05$ level were considered as statistically significant. The concept of statistical significance was used in interpreting the results produced by statistical tests. Cross-tabulations were used to perform bivariate analyses between selected variables, with statistical significance based on the chi-square test for independence. After prior analysis (bivariate correlation) of what variables from the whole data would be possible to use in regression

analysis, both socio-demographic and work-related variables were selected. For the purpose of more detailed interpretation of the results, I decided to perform two logistic regressions. Logistic regression coefficients were used to estimate the odds ratios for independent variable. Logistic regression analysis included independent stress variable in relation to socio-demographic characteristics and work characteristics. Health status was included in both analyses. The reason behind it was the importance of interrelationships between stress and self-reported health status in both socio-demographic and work-related settings.

In view of not such a large sample size, alpha was set at .05; accordingly 95% confidence intervals (95% CI) were calculated. Nonparametric tests were used to test for significant differences at the $p = 0,05$ level.

Data were computed, coded and analyzed using Statistical Package for the Social Sciences for Windows version 12.0 (SPSS Inc) and Microsoft Excel 2000.

Ethical considerations

The study has been approved by Ethical Committee of Kristianstad University (ER2005-17). The purpose of the present questionnaire study was to measure the stress level among employees and to identify the factors associated with work-related stress in order to lessen their impact on health and work. All the participants of this study were under informed consent and each of the respondents received written information (a letter) about the purpose of this study. In this type of study with much data concerning the participants, I have ensured the confidentiality of the records. The letter represented the confidentiality taken by the researcher, voluntariness of the participation as well as the mean of the respondent's participation for the purpose and quality of this project. The participants were also informed: 1) that during the research and data analyzing all the answers of the participants will be processed without any identification information and therefore will be not able to link to each of them as a person. In other words no names were used during the coding, the data analysis and in the reports. 2) That collected data about hotel employees will be used only for this particular research project "Work-related Stress and Health among Hotel Employees in Malmö" and not in other contexts.

All gathered information is confidential and no individual information is given to the authorities.

4. Results

The purpose of this chapter is to describe and summarize the results obtained by statistical analysis in order to address the research questions. Statistical analysis of this research was based on the main investigated research question: to see the prevalence of psychosocial stress among hotel employees by socio-demographic characteristics; to test what characteristics can be predictors of occupational stress; to examine what work characteristics can influence presents of occupational stress and health status using Karasek's model. The analysis focused around these main areas and appropriate conclusions have been made. The analysis started with overall statistical description using all socio-demographic variables of the used data.

Descriptive statistics

Table 1. Characteristics of hotel employees who responded to a questionnaire survey on stress among hotel employees (n=130)

Variables	Percent %
<i>Gender ! n=129!</i>	
Male	36
Female	64
<i>Age (groups in years) ! n=130 !</i>	
-24	17
25-34	41
35-44	28
45 -	14
<i>Civil status ! n=129!</i>	
Married/Partner	58
Alone	37
Divorced	5
Widow/widower	0
<i>Employee status ! n=96!</i>	
White collar	45
Blue collar	55
<i>Employee job type ! n= 115!</i>	
Reception	58
Housekeeping department	7
Managers	10
Breakfast	17
Sales department	8
<i>Education ! n= 130!</i>	
Compulsory school	21
At least 3 years upper secondary school	45
University	34
<i>Working in the current hotel ! n=130!</i>	
Less than 1/2 years	8
At least 1/2 less than 2 years	19
At least 2 less than 5 years	29
5 years and more	45
<i>Totally working in a hotel industry ! n=129!</i>	
Less than 1/2 years	2
At least 1/2 less than 2 years	11
At least 2 less than 15 years	19
At least 5 less than 10 years	30
10 years and more	37

Prevalence of work-related stress and positive/negative health

Figure 2 shows the prevalence of self-reported work-related stress among hotel employees by socio-demographic characteristics. Analysis showed that 39% of answered that they always or often experience work-related stress. Results showed that there were variations in work-related stress regarding socio-demographic characteristics of the hotel employees. Highest percentage of work-related stress by socio-demographic characteristics was found among white collar employees (49%), females (43%), among those who belonged to the age group from 35 to 44 (46%), those who have been working in the hotel they are working right now for 5 and more years (47%) and among those who have been working in a hotel industry from 5 to 10 years (59%). The differences of stress prevalence among different socio-demographic characteristics were not statistically significant. The only significant difference in stress prevalence was found among experience working in a hotel branch in general, $p < 0,05$.

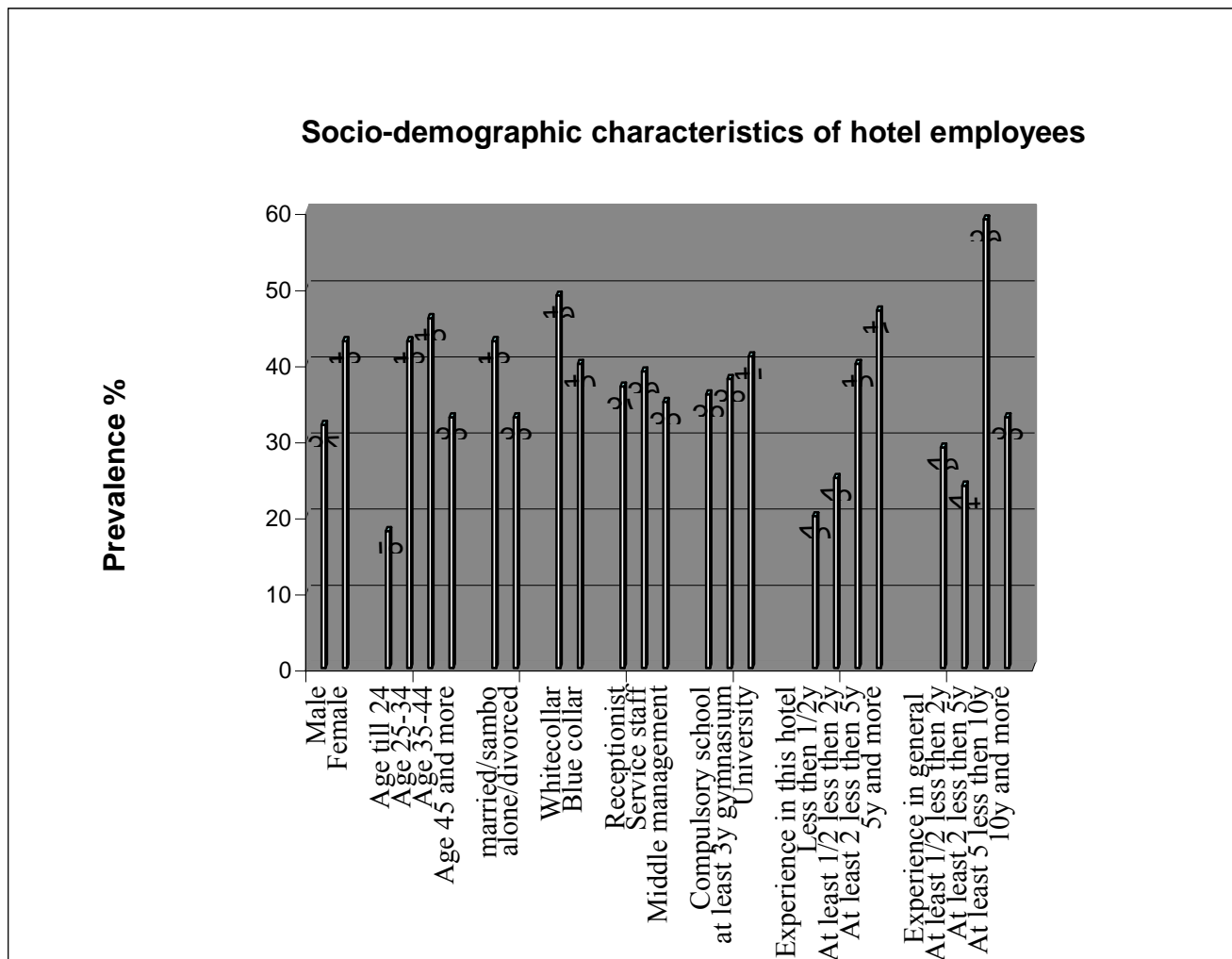


Figure 2. Prevalence of work-related stress among hotel employees by socio-demographic characteristics.

Table 2 shows the distribution of stress levels and self-reported health status in relation to social variables. Analysis showed that employees that were satisfied with their work had low stress (69%) compared to a higher degree of stress (47%), $p=0,01$. Employees who were unsatisfied with their work had good health (88%) compared to bad health (67%), $p=0,004$. Good health was found among those, who are satisfied with their friends (91%) in comparison with those who were unsatisfied with tier friends (71%), $p=0,004$. Employees that were satisfied with their families had low stress (72%) to compare to higher degree of stress (55%), $p<0,05$ and respectively reported good health (98%) to compare to bad health (71%), $p=0,000$. Employees who exercise regularly (88%), $p<0,05$ and compensate stress in a high degree (92%) reported having good health, $p<0,01$ to compare to those who never or seldom exercise (26%) and compensate stress in a low degree (71%).

Table. 2. Stress and health levels in relation to satisfaction at work, with friends and family, physical activity and degree of stress compensation (%).

Variable	High stress	Low stress	p-value	Good health	Bad health	p-value
Satisfaction with work (n=130)						
Satisfied	31	69		88	12	
Unsatisfied	53	47	0,01	67	33	0,004

Satisfaction with friends (n=130)						
Satisfied	38	62		91	9	
Unsatisfied	39	61	0,484	71	29	0,004

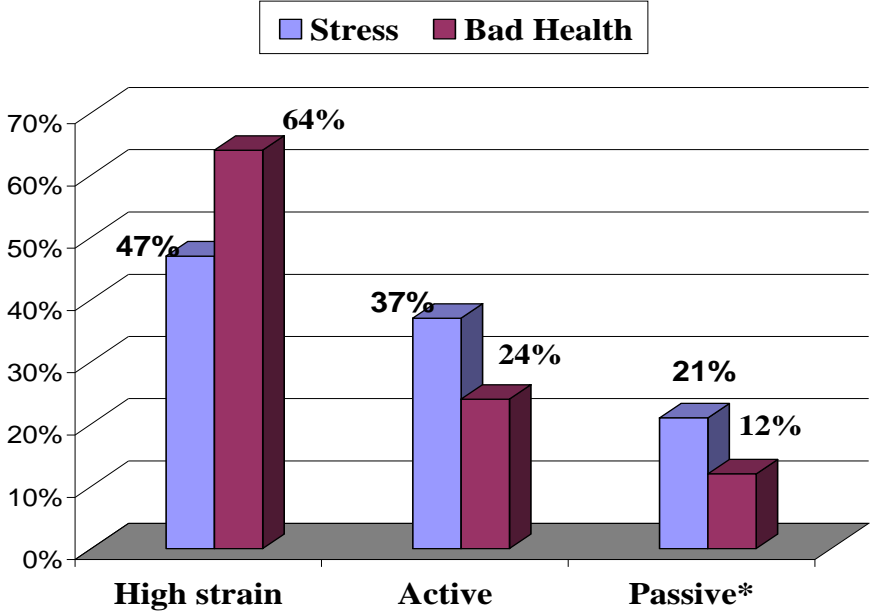
Satisfaction with family (n=130)						
Satisfied	28	72		98	2	
Unsatisfied	45	55	0,042	71	28	0,000

Degree of stress compensation (n=124)						
High degree	64	36		92	8	
Low degree	56	44	0,221	71	29	0,003

Level of exercising (n=130)						
Regularly	68	32		88	12	
Never or seldom	44	56	0,098	26	74	0,034

P-value when testing the hypothesis that there was no difference between groups with positive and negative self-reported stress and health; figures in bold when significant ($p < 0.05$)

The distribution of work-related stress and negative/bad health prevalence among Karasek’s four job types highlighted that 49% of respondents belonged to active (high demand and high control) job types, 39% to high strain (high demand and low control), 11% to passive (low demand and low control) and only 2% belonged to low strain (low demand and high control) job types. Figure 3 of stress prevalence among four job types showed that in active jobs 37% of employees felt stressed, in high strain - 47%, in passive - 21%; $p = 0,19$. Analyzing the distribution of negative/bad health among participants, results showed that the highest percentage of bad health was found among participants in high strain jobs 64%, $p=0,03$ and lowest percentage was found among participants in passive jobs -12%, $p=0,03$.



* means that there were only 2% that had stress in Low strain jobs and no one in this group had positive health. For this purpose, Passive and Low strain jobs were put into one group called Passive job types.

Figure 3. Stress and negative/bad health prevalence among Karasek’s four job types.

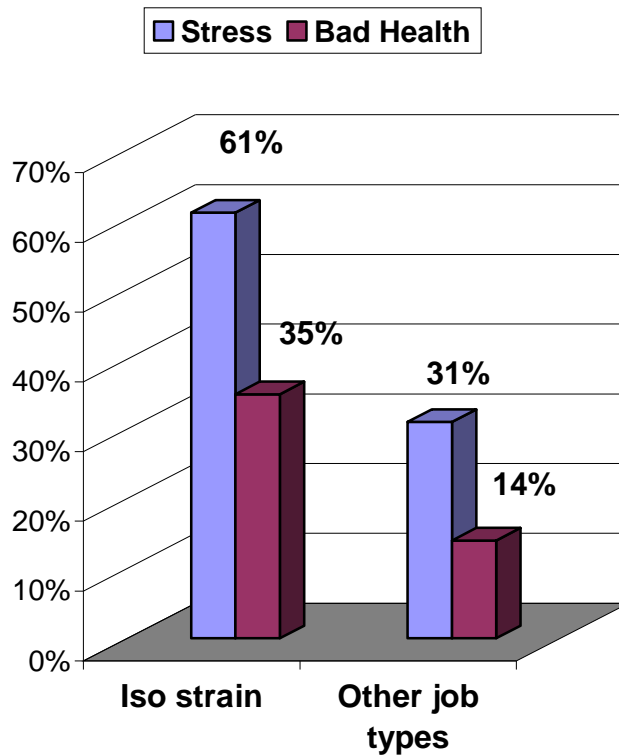


Figure 4. Stress and negative/bad health prevalence among iso-strain and other job types.

Figure 4 shows the distribution of stress and negative/bad health level among Karasek's Job types. More employees in iso- strain jobs (high demands, low control, and low support) reported feeling stressed in comparison to employees in other job types: in iso-strain - 61% and in other job types - 31%; $p=0,003$. The distribution as well showed that more employees in iso- strain jobs reported having bad health in comparison with others: in iso-strain 35 % had bad health and 14% in other job types had bad health, $p=0,01$.

D/C/S model, work-related stress and health status.

Interrelationship between job demands, control, social support, work-related stress and self-reported health status showed some tendencies of the results in table 3. Analyses showed that high job demands ($p=0,000$) and low social support ($p=0,004$) were associated with high stress (always and often stressed); control didn't show significant results in relation to stress level ($p=0,228$). Analysis as well showed that high demands ($p=0,028$) and low control ($p=0,052$) were associated with presence of negative health. Support didn't show significant results in relation to health level ($p=0,167$).

Table 3. Interrelations between components of Karasek's Demand/Control/Support model and positive and negative stress and health (%).

	Demands		Control		Support	
	[Index]	p-value	[index]	p-value	[index]	p-value
High stress	High [14, 6]		Low [20, 1]		Low [16, 4]	
Low stress	Low [16, 8]	0,000	High [18, 4]	0,228	High [13, 2]	0,004
Positive health	Low [16, 3]		High [18, 5]		High [14, 1]	
Negative health	High [14, 6]	0,028	Low [20, 9]	0,052	Low [15, 9]	0,167

"High demands" were defined index ≤ 15 ; "low demands" index > 16 . "High control" index ≤ 19 ; "low control" index > 20 . "High support" index ≤ 13 ; "low support" index > 14 .

Interrelationships between demand and control were tested. The results indicated that there was a significant buffering effect of control on demand levels. Analyses showed that 62% of respondents who reported low demands had high control ($p < 0, 05$).

Work-related factors

To study the relations between socio-demographic, social and work-related characteristics, as well with self-reported health status and stress levels, bivariate analyses were carried out. All variables (Table 4) that appeared to be significant in bivariate correlations were used in calculating odds ratios (OR). Their connection with work-related stress was analyzed in logistic regression analysis (Table 5 and table 6).

Table 4. Variables included in the logistic regression with stress as the dependent variable.

Variable	Scale*
<i>Dichotomised</i>	
Age	Q
<i>Younger (<34) / older (≥35)</i>	
Gender	N
<i>Male / female</i>	
Work status	N
<i>White collar/ blue collar</i>	
Work experience in a hotel industry in general	O
<i>Less than 10 years/10 years and more</i>	
Work experience in the current hotel	O
<i>Less than 5 years/5 years and more</i>	
Satisfaction with family	O
<i>Very satisfied/quite satisfied, unsatisfied</i>	
Satisfaction with work	O
<i>Very satisfied, quite satisfied/quite unsatisfied, very unsatisfied</i>	
Satisfaction with friends	O
<i>Very satisfied/quite satisfied, unsatisfied</i>	
Health status	O
<i>Very good, good/bad</i>	
Demands (component of DCS model)	O
<i>High demands/low demands</i>	
Active	N
<i>Active/all others</i>	
High strain	N
<i>High strain/all others</i>	
General demands	O
<i>High demands/low demands</i>	
General control	O
<i>High control/low control</i>	
General support	O
<i>High support/low support</i>	

* N = Nominal scale; O = Ordinal scale; Q = Quote scale

Logistic regression analysis (table 5) of socio-demographic variables showed that more than 5 years work experience in the current hotel was associated with work-related stress in comparison with work experience less than 5 years (OR= 3,6), p=0,031. Having more than 10 years experience in a hotel industry was associated with stress in relation to work experience less than 10 years (OR=4,0), p=0,046. Unsatisfaction with work (OR=4, 61), p=0,012 and bad health (OR=11, 23), p=0,009 were highest associated work-related stress among socio-demographic characteristics. Other socio-demographic factors such as age, gender, work status, satisfaction with family and friends did not exhibit a significant effect in work-related stress perception in the logistic regression analysis.

Table 5. Logistic regression model of socio-demographic variables analysis to predict work-related stress among hotel employees (n = 95)

Variables	OR	95,0% CI	P-value
Age <i>35 and older</i>	1,19	0,34-4,16	,786
Gender <i>Female</i>	1,47	0,49-4,35	,498
Work status <i>Blue collar</i>	1,9	0,66-5,56	,234
Work experience in a hotel industry in general <i>10 years and more</i>	3,6	0,98-12,5	,046
Work experience in the current hotel <i>5 years and more</i>	4,0	1,14-14,4	,031
Satisfaction with family <i>Unsatisfied</i>	1,82	0,61-5,42	,285
Satisfaction with work <i>Unsatisfied</i>	4,61	1,40-15,14	,012
Satisfaction with friends <i>Unsatisfied</i>	1,3	0,42-3,91	,659
Health status <i>Bad</i>	11,73	1,85-74,27	,009

OR – Odds Ratio. Variables not showing a bivariate relation to work-related stress and therefore not included in the logistic regression model were: civil status, education, and work profession, exercise level, stress compensation, level of leisure time activities. Results of logistic regression that were statistically significant were marked as in bold numbers.

Logistic regression analysis (table 6) of work characteristics showed that active jobs were highest associated with work-related stress (OR=6, 79), $p=0,045$ among Karasek's four job types. High strain jobs showed a tendency to be associated with work-related stress, but the effect was not statistically strong, $p>0, 07$. Lack of support in general terms (OR=3, 02), $p=0,028$, low demands in general terms (OR=4, 2), $p=0,006$ and low work demands that included tasks, speed of work (OR=4, 3), $p=0,001$ showed to be those work characteristics that were significantly associated with work-related stress. In work characteristics context bad health (OR=5, 14), $p=0,004$ showed significant relation in perception of work-related stress. Low control at work was not significantly related to work-related stress in the logistic regression analysis.

Table 6. Logistic regression model of work characteristics variables analysis to predict psychosocial stress among hotel employees (n = 128)

Variables	OR	95,0% CI	P-value
Demands (component of DCS model) <i>Low</i>	4,3	1,89-11,1	,001
Job type <i>Active</i>	6,79	1,04-44,21	,045
Job type <i>High strain</i>	4,59	0,87-24,23	,073
General Demands <i>Low</i>	4,2	1,51-12,5	,006
General Control <i>Low</i>	1,54	0,52-4,58	,442
General Support <i>Low</i>	3,02	1,13-8,11	,028
Health status <i>Bad</i>	5,14	1,68-15,73	,004

OR – Odds Ratio. Variables not showing a bivariate relation to work-related stress and therefore not included in the logistic regression model were: passive and low strain job types, control and support (the components of Karasek's Demand/Control/Support model, iso-strain job types. Results of logistic regression that were statistically significant marked as in bold numbers

5. Discussion

The aim of this chapter is to discuss the results in relation to the research questions of this study, theoretical framework and previous research discussed in chapters above. By carrying out the presented study “Work-related Stress and Health among Hotel Employees in Malmö”, I intended to increase the understanding of the natures of workplace stress in a hotel sector. The prevalence and levels of work-related stress among socio-demographic and work characteristics were measured and interrelationships among stress, self-reported health and other depended variables were assessed as well as possible factors associated with work-related stress were identified.

Theoretical implications of this study are considered and recommendations with regard to future research and practice on workplace stress in hotel industry are given. Methodological implications for the measurement of workplace stress setting in general are outlined and some limitations are presented. Finally, conclusion from the results drawn from this study is provided.

Socio-demographic characteristics

Descriptive analysis was performed for two purposes: in order to draw the concrete view of the respondent’s rate regarding socio-demographic and work characteristics and to examine if employees differ by socio-demographic characteristics in the experience of work-related stress.

The data presented in this study showed that a part of the Swedish (in Malmö) employees in a hotel sector investigated faces risks for work-related stress. The prevalence of occupational stress among hotel employees highlighted that almost half of the respondents always or often feels stressed at work.

Concerning stress distribution among the respondents it was found that the differences of stress prevalence among different socio-demographic characteristics were significant only among those who had working experience in a hotel industry. The differences in stress perception were not statistically significant among other socio-demographic characteristics, although the distributions showed that female, workers between age 35-44, married or living together, white collar, service staff, workers having highest university degree, employees who work in this particular hotel more than 5 years and have more than 10 years experience in the hotel industry, tend to feel and experience more stress at work than the rest of the participants.

The socio-demographic characteristics that didn’t show significant differences in stress perception still can draw a broader overview and direct some potential tendencies of stress prevalence in this particular occupation field; however it’s hard to speculate on the tendencies, since there are so many controversial opinions about socio-demographic characteristics concerning stress in occupational literature.

Reviewing stress research in organizations, some researches have found little or no significant evidence of gender influences in perception of job stress and stress-strain relationships (Nelson and Burke, 2002). In addition, Bright (2001) supported this statement by noticing that the previous research on stress does not reveal clear-cut gender differences. Nevertheless, studies by Matt and Dean (1993), demonstrated that the outcomes of job strain have higher impact for females than for males. Similar findings in case of females were published in another study by

Mirowsky (1996). Bodil (1997), Tsutsumi et al (2001) as well found in their studies that females tend to report more stress than do males. According to Karasek and Theorell (1990) psychological demands at work though do not differ markedly for men and women, they appear higher for women. The results present in this study though didn't showed a clear gender differences, implied the tendency that female workers tend to report higher stress at work which is in agreement with studies discussed above.

Cooper et al (1998) indicates that despite what is often stated, there are no significant differences in stress perception among social class. Supporting his implication, there were no significant differences found in stress prevalence among blue-collar workers and white collar class.

Education is stated to be one of the social-demographic characteristics that may influence the reporting of strain outcomes. Tsutsumi et al (2001) found that the level of strain was significantly higher among those who were less educated. For example Jones and Briggth (2001) found that men with higher levels of education were more likely to express reactions to environmental stressors in psychological terms, than those with lower education. Although men and women were not studied separately in this study, there were no significant differences found in stress perception by education degree.

Although Axelsson, Vanagas (2004) imply that there is possibility that there can be age differences in job strain perception, their study among general practitioners showed that the total effects on job strain are twice larger in the sample of old persons as in the sample of young persons and the age impact on job strain increases in older age groups. The results in this case partly agree with their findings, the stress perception increased when the age increased, but from age 45 showed a decline in stress perception. Nevertheless differences among age groups were not significant.

Experience at work showed some potential tendencies in stress perception as well. The fact that having many years of experience in the hotel workplace was associated with stress could be explained by repetitive work, not challenging enough work, a carrier issues over the years, being not appreciated at work and etc. Normally years of experience in a specific occupation could help to lessen the impact of stress in a way that employees can adapt to a specific source of stress or stressful situation common for that particular workplace. In this case thought, since the hotel working setting is an everyday interaction with customers, the stressful situations are constantly changing, new one arouses, and thus it may be difficult for some employees to adapt even during many years.

Results showed that socio-demographic characteristics were not significantly associated with work-related stress among hotel employees. Nevertheless, I think it is important to take into consideration the possible tendencies in stress perception in socio-demographic setting, in order to compare them to the future research and make more appropriated conclusions.

“Strain” hypothesis

Karasek's Demand/Control/Support model was used as a tool to define job types and to examine their distribution in a population that felt stressed.

The distribution of Karasek's for job types revealed that the highest percentage (49%) of respondents belonged to active job types and only 13% belonged to passive and low strain job types. Karasek's theory of job strain model was partly confirmed as the highest level of perceived stress was found in high strain (high demands and low control) jobs (47%) and employees in passive (low demands and low control) and low-strain (low demands and high control) jobs had

the lowest level of perceived stress (21%). The 'strain' hypothesis was used as a measure where the differences in stress perception and health status were expected in a 'high-strain' jobs. According to Karasek and Theorell (1990), the high job strain groups would normally be expected to have the highest level of perceived stress. The results were not significant, but showed the tendency to confirm Karasek's (1979) theory.

Schechter et al (1997) showed that employees in jobs with high demands and low control as well as in low demand and low control situations tend to report higher levels of stress, poorer health and higher levels of absenteeism, supporting the findings of the present study. Araujo et al (2003) as well supported tendencies of the present study discovering that prevalence of work-related stress was higher among those in high-strain jobs, compared to workers in passive jobs in his study.

“Support buffering” hypothesis

The role of social support as one of the main components of work-characteristics was tested on the level of stress and health status. Results of interrelationships between stress level and work characteristics indicated that social network plays an influential role in dealing with occupational stress. Among hotel employees low social support was found to be associated with stress. Support appeared not to play a significant role on employee's health.

The Karasek's (1990) approach proposed that social support and control can act as a buffer. This approach indicates that control or social support, (or both) experienced at work interact with stressors in a way that reduces the effects of the stressors on the individual's well-being. In this particular study two approaches were examined: buffer effect of social support and control. Testing the *support buffering effect* in the present study, I referred to Arnold (2005), who stated that supportive work environment is the one where employees receive good support from both colleagues and supervisors. Arnold (2005) as well noticed that the more social support a person receives the less impact job stressors will have on that person. In other words if a person experiencing stressors receives little or no social support, he or she should then experience more of the negative outcomes commonly associated with high levels of stress. Beehr (1995) noticed that social support can buffer or moderate the relationships between work environmental stressors and strains. Andersson (1999) in her work accounted for the fact that improved social support is expected to lead to improved health and well being for the workers. Findings from Quine (1998) and from Marmot et al (2000) Whitehall study as well proved that good levels of work social supports had a protective effect on health. Nevertheless the findings from the present study had shown that social support didn't have a significant effect on health.

“Control buffering” hypothesis

Examining *the control buffering role*, there was no significant effect of control found on experienced stress level, thus it is impossible to state that there were any buffering effects concerning stress. Interrelationships between demand and control indicated that there was a significant buffering effect of control on demands level. The results presented in this study of interrelationships between stress level and work characteristics indicated that control was associated with positive health. Interrelationships indicated that there was a significant buffering effect of control on demand levels.

Testing control buffering approach I referred to Karasek (1979) who identified the important influence of job control in the work-strain relationship. Karasek and Theorell (1990) proposed that employees with the greatest amount of control at work will experience the least amount of stress. Karasek (1979) as well proposed that control can buffer the potentially negative effects of high demands on health. He implied that demands were only stressful when the worker had low control. It means that work demands pictured in low control situations are more stressful than demands in high control situations. Results from the present study confirmed Karasek’s approach in this case. Drenth et al. (1998) supported findings of the present study by finding that increased control had positive aspects with regard to general state of health. The importance of job control as a protecting factor for health has been as well demonstrated by Elovainio, Kiwimaki et al. (2005). The evidence from Whitehall II study suggested that low control was the more important component in health status than other work characteristics. People in jobs characterised by low control had worse health (Marmot, 2000). Rodrigues et al. (2001) adds that control is a crucial resource that moderates the potential negative effects of job stress. Hence, increasing employee’s control prevents the occurrence of job strain, that is, job stress will not affect employee’s health when sufficient levels of control exist.

However, whether perceived job demands, control and social support combine additively or through an interaction, it is clear that they are important factors determining the effects of work on employees stress perception and health as has been proposed by multi-tested results from Karasek’s job Demand/Control/Support model (1990).

“Iso-strain” hypothesis

Since social support is identified as a very important aspect of the work environment that may be stressful, a lack of support from work colleagues and managers were tested in this study as well. Iso-strain hypothesis were tested in order to see if there was an effect of lack of support in health status and stress perception.

Results confirmed iso-strain hypothesis by indicating that employees in iso- strain jobs (high strain/low support) were significantly more stressed: in iso-strain 61% and in other job types 30%. The distribution as well showed that employees in iso- strain jobs had significantly worse health in comparison with others: in iso-strain 35 % had bad health and 14% in other job types had bad health.

Iso-strain jobs presented work characterized by high demands, low control, and low support (or isolation), that is considered to be the most noxious work situation (Maes, Van der Doef, 1999). Chang (2000) supported the present study findings with the similar findings in his study, when iso-strain jobs were the most stressful. Health risks as well might be increased by low levels of social support. Drenth et al. (1998) refer to Junghanns et al. (1999) who confirmed that in iso-strain jobs predispose workers to experience health problems. Amick C.B., Kawachi, et al. (1998) in their study confirmed that iso-strain work was associated with the poorest health status. Whitehall II study showed that lack of support from supervisors was associated with an increased risk of poor general mental health. In general the results of this study indicated that phenomena of a lack of social support exist in hotel sector. Indication of risks related to a lack of social support for increased stress and health status should be taking into consideration when talking about healthy environment in a hotel industry.

Social factors effect on stress and health

The focus of this study was basically based on Karasek's job Demand/control/Support model approach in examining occupational stress perception in hotel industry. One of the weaknesses of this approach that it doesn't take into consideration other important factors, like social life factors, that might influence stress at work. Anyhow, in the present study some social factors were presented and tested, such as satisfaction with work, family, friends, exercise level, stress compensation and participation in organizations outside work. The analysis was performed in order to examine the contribution of these factors on self-reported stress and health. Analysis showed the importance of social life factors. Employees that were satisfied with their work and families had low levels of stress and good health. Good health was found among those, who are satisfied with their friends. Regular exercise and stress compensation were associated with good health but had no significant effect on stress level.

World Health Organization (2003) by defining health determinants noted that physical activity plays an important role in long-term health maintenance. Kiwimaki et al (2005) added that association between work stress and lower leisure-time physical activity exists. Orht-Gomer (1994) as well showed that satisfaction with family was the strongest predictor of positive health condition in her study.

The findings from the present study suggested that apart of socio-demographic and work- related characteristics, social life factors play important role in a hotel sector. Satisfaction with work, friends ad family, regular exercise and high stress compensation all together contributed as an influential factors in stress perception (significant only satisfaction with work and family) and proved to have moderating affect on employee's health.

Health and work-characteristics

In the present study self-reported health was used as a measure of the individual's health status and it reflected a person's integrated perception of health as suggested by the World Health Organisation's definition of health (WHO, 2004).

Different patterns were found for interrelationships between work characteristics and occupational health status. Analysis indicated that the two psychosocial factors at work explored- that is, high demands and low control were significantly associated with negative self-reported health. These results demonstrated that employees who perceive their work demands as high and their work control as low are at exposure with negative health status.

Karasek's (1990) four job types displayed associations with self reported health. High strain jobs were significantly associated with bad health. Finally, it may be surprising to observe that social support was not associated with self-reported health. This finding needs further consideration. However, results of the present study presented the theoretical approach of Karasek's model and confirmed job D/C/S model.

Larsson and Setterlind (1990), Quine L. (1998), WHO (2003) supported findings of the present study that high strain jobs were associated with the presence of negative health and presented them in their own study. Schrijvers et al. (1998) supported these results and indicated that the odds of poor perceived health in his study were larger among people reporting low job control and high psychological demands, which is how Karasek's (1990) defined high- strain jobs. Nevertheless, not all studies showed straightforward relations between high demands and health status. Ejlertsson et al. (2006) found in their study that high demands were significantly related to good health. These findings suggest that self-reported health status could be a sensitive measure talking about work-characteristic setting

Although I can not conclude that there is a causal relation between psychosocial factors at work and self-reported health, some considerations support this possibility: previous reports from some research studies (discussed in theoretical part). These considerations strengthen the possibility that psychosocial factors at work have a causal effect on self-reported health. The main focus of this study was to examine the relationships between stress and other work and social characteristics. Health is very important to us and as well may be identified as a source of stress affecting the perception of stress at work. Nevertheless, from self-reported health status it is impossible to distinguish between physical and psychological health, thus it makes it more difficult to discuss about interrelationships among health and work-characteristics. Another difficulty talking about health outcome is a lack of knowledge of health behaviours of the participants that as well limits the insight of how health is associated with work setting. For the future research health behaviours like smoking, food habits, mental health status and other physical health factors could be taking into consideration in order to investigate causal relationships of work-related stress and health status.

Factors of work-related stress

Using proxies of the Karasek's model, the results of logistic regression suggested that active jobs were significantly associated with work-related stress. High strain jobs showed only a tendency to be associated with occupational stress. The risk of experiencing stress at work aroused from low demand situations. Low general support and low general demands were significantly

associated with stress perception. In conclusion, job demand, rather than job decision latitude appeared to be the common factor underlying stress perception. In a context of work-related characteristic bad health was associated with work-related stress. It may be surprising to observe that control, the main scale of the Karasek's model, was not associated with stress. This finding needs further consideration. Unsatisfaction with work and many years of experience in a current workplace and hotel industry were associated with work-related stress. Bad health showed the highest association with occupational stress in socio-demographic setting.

The reason why health status was associated with stress in both regression models could be explained in two ways: bad health could be seen as a predictor of stress perception in a workplace, and on the other hand, stress perception could influence employee's health status. The speculations could be just implied in order to understand the overview of the working environment setting. Calnan et al (2001) in their study showed that perceived health status was found as significant predictors of job strain, supporting findings of this study. Nevertheless, deeper analysis of interrelationships between stress and health are needed in order to draw proper conclusions.

In general, both regression analyses highlighted low job demands, lack of social support, active job types, bad health, unsatisfaction with work, many years of experience in a current workplace and hotel industry in general were be found significantly associated with work-related stress. It is important to have a broad view of the possible work-related stressors, hence a deeper picture on work demands and control is needed. Even though low demands were associated with occupation stress, potential work-related stress factors like active jobs with high demands could be seen appearing from changing timetables and work including evenings, nights and the weekends, which is likely to have a negative impact on the natural body rhythm. A key characteristic of jobs in the hotel industry is that employees work include not only performance of physical operations but mental and emotional as well. Constant interface with clients could be seen as high mentally demanding work, because for some employees it could represent a source of pressure on them, especially for those who hold jobs with low social status and without having been trained in how to communicate appropriately. Lack of experience with particular situations could face stressful situations. Personalized service (respond to the different needs of each client), may also contribute to the overall stress level at work. Increasingly globalized economy, which is based on increasing competition, could lead to greater pressures on workers and employers in the hotel industry as well.

Lack of social support from managers, supervisors and colleges was associated with work-related stress. Results didn't showed specific issues related to lack of support. Nevertheless factors such as being undervalued, inadequate or lack of feedback and lack of consultation could represent sources of stress to some employees. All these possible factors of work-related stress could contribute to the overall employee's unsatisfaction with their jobs that appeared to be one of the indicators of occupational stress.

6. Model selection

Karasek's job Demand/Control model differs from other job stress models by its simplicity (Mikekelsen et al, 2005). Its narrow focus on demand and control and the interactions between two of them means that this model is easily testable and has practical implications. Jones (2001) notes, that this might be the reason for the Karasek's model's dominance in both the psychological and medical research. However, Jones (2001) argues that this model has its own limitations and limited impact on practice. This might be because model's main variables are two general and non-specific to suggest practical interventions for promoting research. Drenth et al (1998) adds that the model as well fails to take into consideration many other important factors such as a role of social support. The importance of social support in working environment was described in chapters above. That is the reason why I decided to use the expanded Karasek's model, by adding the third dimension of social support, resulting in Demand/Control/Support model.

The job Demand/Control/Support model used in this study seemed to be a useful tool for identifying the possible sources of work characteristics in the hotel industry. Although, it has to be mentioned that the job demands as well as job control scales used in this study were slightly different from the ones in the original studies on the job strain model proposed by Karasek in 1979. The model was narrowed, and in a result the measure of job control (originally created by Karasek 9-items) used in this study had unequal proportion in measuring control: decision authority had 4 out of 6 questions regarding control. The same issue was faced with the main Karasek's model's component demands. 4 out of 6 questions were describing physical work demands, leaving only 2 questions concerning psychological demands. In this case the association of work-related characteristics with stress and interpretation of the results could have a bias as well. Regression analysis showed that low demands were associated with work-related stress. Since the psychical demands were dominating in a survey, it might have affected the results. The hotel is a huge source of psychological demands as well, but respondents might be suppressed in a lack of options to reply. The same speculation could be proposed concerning the control. Since control didn't show statistically significant results in perception of stress, it might be explained by generality of the questions. Decision authority is an important factor, but skill discretion in the specific workplace like hotel industry could be speculated to be a dominating factor in stress perception. People working in a hotel industry have various stressful conditions at work that may differ from the other industries and workplaces. As example, stressful work characteristics like high psychological demands could be seen as every day's confrontations with guests, tourists, different organizations and sectors of government. High physical demands could be seen as stressful work shifts and schedules, taking in consideration night shifts, not properly defined work roles. Thus the interpretation of the results should be carefully taken into account.

These implications concerning the interpretation of the results is just naive speculations, that do not have a theoretical support, but what is important that it could be meaningful to notice and analyse alternative implications for the benefit of deeper knowledge in analysing sources of workplace stress.

7. Study limitations

First, the findings cannot be generalized to the larger population of hotel employees because circumstances and work settings could differ by region and by employer.

One of the weaknesses of the study derives from the fact that the present set of results was based on a relatively small cross-sectional data. Cross-sectional design can limit the interpretability of the results in terms of causal relationships. Because of considerably small data (n=130), some methodological and statistical issues could act as a failure to find interactive effects. A larger sample size may have increased the ability to predict how socio-demographic and work-related variables impact on stress perception and health status.

Another weakness of the present study might be that research into this study was based on survey data. One problem using survey data is the risk of self-reported bias, for example measures of both independent and dependent variables were based on self-reported data (*self-reported stress* (independent variable) and *self-reported health status* (one of the dependent variables)). The use of a self-report instrument may be viewed as a limitation since self-report measures could inflate the correlations found among variables. Since no scale is perfectly reliable, associations between self-reported stresses appeared to be weaker than they could be in reality. According to Axelsson et al (2004) some authors have argued though that this phenomenon is not a major threat if interaction has been found. Furthermore, it could be impossible to know whether respondents have answered truthfully that may affected the way in which participants answer items.

The method of responding to the survey may have reduced the response rate, as employees were asked to return completed surveys through the mail system, and many may have felt uncomfortable with this due to the sensitivity of some of the items in the survey (like social status, education, etc.) On the other hand, employees could return the survey in sealed envelopes and many used this option. Another speculation could be that employees who have high demands on the job may not have been interested to take time out of their day to complete the survey.

Despite the limitations, looking through the perspective of workplace health promotion, this study contributes to the acknowledgements need for further research to explore sources of stress among hotel employees, their possible solutions and preventive measures and also to determine the effects of any change.

On the positive side the present's studies sample was rather sufficient regarding the sample size and allowed explorations of tendencies. The participation rate was acceptable, and most of the scales used in this study were previously validated instruments.

8. Conclusion

Occupational stress has been extensively studied with a diverse population of subjects for many years. Very little of this attention has focused specifically on hotel industry. Yet, very little is known about the subject. The study described in this dissertation was designed to focus on the issue of stress for employees working in a hotel industry.

Workplaces can determine health because they provide social environments that can promote stress and/ or provide coping opportunities. Because the majority of adult life is spent at work, the workplace can be an effective setting for reducing stress and improving the health of employees by providing social support for healthy behaviour among colleagues, and by using a variety of interventions.

The research described here showed that there is a connection between the outcome of various work-related, social and socio-demographic characteristics and the level of work-related stress among hotel employees. With the use of the Karasek (1990) job strain exposure measure, the psychosocial work environment has been shown to be an important determinant of health status among working people as well as in occupational stress perception. The analytic part discussed above showed that work characteristics play an important role in stress perception and health status. The relationship of specific outcomes of the logistic regression and other analysis, together with the amount of occupational stress experienced, provided useful insights into the issue of the stress in a hotel sector in Malmö. Karasek's (1990) job strain model hypothesis guided the results of the present study; nevertheless explored relations should be interpreted carefully. Although I can not conclude that there was a causal relation between psychosocial factors at work-related stress level and self-reported health status, some considerations presented in the results supported this possibility. These considerations strengthen the possibility that different factors at work have an effect on self-reported stress and self-reported health.

This study lays the groundwork for the development of ways to identify causal relationships in the hotel industry. However, it is important to remember that while testing, analysing and verifying different work characteristics and their impact on employee's health and stress perception it is important to take into consideration the situation-specific approach. It means that verifying that different work characteristics are significant for employee's health in different hotels.

Findings from the present study also underline the need for longitudinal design and for separate analyses for men and women when studying psychosocial factors at work.

9. Implications

The reason of highlighting and identifying possible risk factors of occupational stress serves for the future implications, both practical and scientific. In a Health Promotion field it is important to identify the sources or causes of workplace stress in order to make appropriate interventions and changes at the primary level. Health is important determinant of good quality of life in general and stress has enormous impacts on health of the employees. Thus it is necessary to act on the results and findings of the present study in order to make interventions promoting employees health and well-being. The most important practical implication that follows from the causal relationship between work-characteristics, health and stress is that interventions directed for future searching and identifying the differences in stress perception between psychological and physical job demands. Stress is not an inevitable consequence if greater support and job control at the workplace could be provided. Thus by increasing job control and social support in a workplace may help to reduce work-related stress and improve employee's health. Impact of lack of control and social support at work could be lessened if the info structure of the individual hotels would be reorganized. Organizational management courses and education probably could contribute in reducing unnecessary stressful conditions in a hotel industry. More supportive work environments, more feedback for employees, validation of their good work and fostering a supportive working environment, more flexible work schedules, occasional weekends off, giving employees more authority and flexibility with respect to dealing with customers could help managerial level of the hotel industry reach better results in employee's stress perception.

Systematic research on stress-related issues in the hotel industry could be paramount to the satisfaction, health and well-being of employees and the future success and growth of the hotel sector.

10. References

- Altman D.G. (1991). *Practical Statistics for medical research*. London: Chapman and Hall.
- Anderson N., Ones D. S., Sinaugil, Viswesvaran.(2002). *Handbook of industrial, work and organizational psychology*. Volume 2. Organizational psychology.
- Arnold J., Silvester J., Patterson F., Robertson I., Cooper C., Burnes B.(2005). *Work Psychology*. Understanding Human Behaviour in the Workplace. Fourth edition. London.
- Andersson A.C. (1999). *Work related stress*. D-uppsats, Kristianstad Hogskolan.
- Anne-Marie Mureau .Workplace stress: A collective bargaining issue.(Elektronik). Retrieved last on: 2006/10.From:<http://www.ilo.org/public/english/dialogue/actrav/publ/126/mureau.pdf>
- Amick C.B., Kawachi, et al. (1998). Relationship pf job strain and iso-strain to health status in a cohort of women in the United States. *Scandinavian Journal of Work Environmental Health*: 24 (1); 54-61.
- Araujo T.M., Aquino E, Menezes G, Santos C.O, Aguiar L. (2003). Work psychosocial aspects and psychological distress among nurse. *Revista de Saude Publica*, 37; 424-33.
- Azian B.D.,Rusli B.N., Winn T., Naing L. (2004). Prevalence and risk factors of job strain among laboratory technicians in Hospital University Sains Malaysia Singapore. *Medicine Journal* 45; 170-175.
- Axelsson S.B., Vanagas G. (2004). Interaction among general practitioners age and patient load in the prediction of job strain, decision latitude and perception of job demands. *BMC Public Health*, 4; 59.
- Axelsson S.B., Vanagas G. Vanagiene V. (2004). Do age, gender and marital status influence job strain development for general practitioner? *Medicina (Kaunas)* 40; 1014-1018.
- Beehr T.A. (1995). *Psychological stress in the workplace*. London : Routledge.
- Beehr T.A., Glazer S. (2001). A Cultural perspective of social support in relation to occupational stress. *Research in Occupational Stress and Well-Being*. Greenwich.
- Blædel.A, Hansen H.C., Nielsen K., (2004).”Health Check” for the hotel and catering sector.
- Bodil B. (1992). *Women among Men* .Gender- related stress and health hazards affecting women working in a male-dominant industry.
- Bright J.(2001) Individual Difference Factors and Stress: A Case Study Paper. University of New South Wales. NOHSC Symposium on the OHS Implications of Stress; p. 57-79
- Burrow S. (2000). Occupation health and safety unit. Stop stress at work. A guide for workers. (Electronic).Last reviewed 2006/11.
From:<http://www.actu.asn.au/public/ohs/files/stressatworkguide.pdf>

Cambell J.Q.Tetric L.E. (2002). *Handbook of Occupational health psychology*. Washington DC: American Psychological Association.

Calnan M, Wainwright D, Forsythe M, Wall B, Almond S. (2001). Mental health and stress in the workplace: the case of general practice in the UK. *Journal of Social Science Medicine*, 52; 499-507.

Cartwright S. (1997). *Managing workplace stress*. London, Sage

Chang, S.J. (2000). Trends and future directions of job stress in Korea. In N. Kawakami (Ed.), *Job stress in East Asia: Exchanging experiences among China, Japan, Korea, Taiwan and Thailand. Proceedings of the First East-Asia Job Stress Meeting*, Waseda University International Conference Centre Japan, p. 23-26.

COEH (Center for Occupational and environmental health). Work stress hurts health of Las Vegas hotel cleaners, study indicates, 2002. (Elektronisk). Retrieved last on 2006/12. From http://coeh.berkeley.edu/News/Bridges2002Sept/PF_2002Sept_Vegas.htm

Cohen L., Lawrence M. (1989). *Research methods in education*. London, New York.

Cooper C.L.(1994). *Creating healthy work organizations*, Chichester: Wiley.

Cooper C. L., Payne R. (1995). *Causes, Coping and Consequences of Stress at work*. Chichester: Wiley.

Cooper C.L. (1998). *Theories of organizational stress*. Oxford: Oxford University Press.

Cooper C. L. (2001). *Managerial, Occupational and Organizational Stress research*. Manchester School of Management, UK.

Cooper C.L., R. Fotinatos-Ventouratos (1998). Social class differences and occupational stress. *International Journal of stress management*, 5: 4; 211-221.

Cox T., Griffiths, A., Rial-Gonzalez, E. (2000). *Research on work-related stress*. European Agency for Safety and Health at Work. Belgium: European agency for safety and health at work.

Dollard M F. (2001). *Work Stress Theory and Interventions: from Evidence to theory*. The National Occupational Health and Safety Commission Symposium on the OHS Implications of Stress, Commonwealth of Australia, 3-57.

Dollard M.F., Winefield A. (2002). Mental health: over employment, underemployment, unemployment and healthy jobs. *Australian e-Journal for the Advancement of Mental Health*, 1:3; 1-26.

Drenth J.D.P., Thierry H., Wolff J.C. (1998). *Handbook of work and organizational psychology*. Personnel psychology ;Third edition.Trowbridge, Willts, UK.

Ejlertsson, G. (2005). *Enkäten i praktiken. En handbok i enkätmetodik*. Lund: Studentlitteratur.

Ejlertsson, G. (2003). *Statistik för hälsovetenskaperna*. Lund: Studentlitteratur.

Ejlertsson, G., Edén, L., & Leden, I. (2002). Predictors of positive health in disability pensioners: a population-based study using Positive Odds Ratio. *European Journal of Public Health*, 2:20.

Ejlertsson G, Andersson H, Larsson E. (2006). Workplace factors predict good health but not good quality of life: a population-based Swedish questionnaire study. *European Journal of Public Health* ; 16: 173.

Elovainio M., Kiwimaki M., et al.(2005). Job demands and job control as correlates of early retirement thoughts in Finnish cosocial and health careemployee. *Work and Stress*.19:1; 84-92.

Hancock P.A., Desmond P.A. (2001). *Stress, Workload and Fatigue*. Mahwah, NJ: Lawrence Erlbaum.

Houtman I. 2005. Work related stress. *European Foundation for the Improvement of Living and Working Conditions*.

Job stress network. (Elektronisk). Retrieved last on 2007/2. From: www.workhealth.org.

Jones F., Briggst J. (2001) *Stress. Myth, theory and research*. Harlow: Prentice Hall (England).

International labour organization. Workplace stress. (Elektronisk). Retrieved last on 2006/12. From <http://www.ilo.org/public/english/dialogue/sector/sectors/tourism/violence.htm>

Lange A., Taris T., Kompier M., Houtman I., Bongers P.(2004). The relationships between work characteristics and mental health: Examining normal, reversed and reciprocal relationships in a 4-wave study. *Work and Stress*. A journal of work, health and organizations, 18 ;149 – 166.

Larsson G., Setterlind S. (1990). Work load/work control and health: moderating effects of heredity, self image, coping, and health behaviour”. *Journal of health science*, 1:2; 79-87.

Lazarus, R. S., Folkman S. (1984). *Stress, appraisal, and coping*. New York: Springer

Karasek R.A. (1979).Job demands, job decision latitude, and mental strain: implications for job redesign. *Administrative Science Quarterly*, 24: 2; 285-309.

Karasek R.A., Theorell T. (1990). *Healthy Work: Stress, Productivity and the Reconstruction of Working Life*. New York: Basic Books.

Kawakami, N. (2000). Preface. Job stress in East Asia: Exchanging experiences among China, Japan, Korea, Taiwan and Thailand. *Proceedings of the First East- Asia Job Stress Meeting*, Waseda University International Conference Centre Japan; 1-23.

Khuwaja A.K, Qureshi R., Andrades M., Fatmi Z. (2004). Comparison of job satisfaction and stress among male and female doctors in teaching hospitals of Karachi. *Journal of Ayub Medical College*, 16; 23-7.

Keita P., Hurrell Jr. J.(1994). *Job stress in a changing workforce*. Investigating gender diversity and family issues. Washington DC: American Psychological Association.

Kivimäki, M., Leino-Arjas, P., Luukonen, R., Riihimäki, H., Vahtera, J., & Kirjonen, J. (2002) Work stress and risk of cardiovascular mortality: prospective cohort study of industrial employees. *BMJ*; 325.

Kiwimaki M. et al. (2005). Work stress, smoking status, and smoking intensity: an observational study of 46 190 employees. *Journal of Epidemiology and Community Health*; **59**:63-69.

Kiwimaki M. et al. (2005). Job strain and leisure-time physical activity in female and male public sector employees. *Journal of Preventive Medicine*, 41; 532-539.

Kristensen T., Hannerz T., Tuschsen F. (2002). Hospitalizations among employees in the Danish hotel and restaurant industry. *European Journal of Public Health*, 12; 192-197.

Kuper, H., Marmot M. (2003). Job strain, job demands, decision latitude, and risk of coronary heart disease within the Whitehall II study. *Journal of Epidemiology and Community Health*, 57; 147-153.

Maes S., Van der Doef M. (1999). The Job Demand-Control (-Support) model and psychological well-being: a review of 20 years of empirical research. *Work and Stress*, 13; 87-114.

Marmot M., Stansfield S., Head J. (2000). The Whitehall II Study Work-related factors and ill health –The Whitehall 2 study, *Contract Research Report 266/2000*, Health and Safety Executive (U.K.), Norwich.

Matt G.E, Dean A. (1993). Social support from friends and psychological distress among elderly persons: moderator effects of age. *Journal of Health and Social Behaviour*, 34; 187-200.

Mikkelsen et al. (2005). The effects of new dimensions of psychological job demands and job control on active learning and occupational health. *Work and stress*, 19:2; 153-175.

Mirowsky J. (1996). Age and the gender gap in depression. *Journal of Health and Social Behaviour*, 37; 362-380.

Nelson D.L., Burke R.J. (2002). *Gender, work stress and health*. Washington DC: American Psychological Association.

Niezborala M, Marquie JC, Baracat B, Esquirol Y, Soulat JM. (2003). Job stress and occupational status in a French cohort. *Epidemiology and Public Health*, 51:6.

NIOSH (National institute for occupational health and safety). (1999). Stress at work (Elektronisk). Last retrieved on 2007/1. From <http://www.cdc.gov/niosh/stresswk.html>

Orth-Gomer K. (1994). Stress and social support in relation to health and disease. *Behaviour and psychological aspects of prevention. Stress research reports No. 245*. International teaching seminar in behavioural medicine, Karolinska institute, WHO psychosocial center, Stockholm.

Rodrigues I., Jesus B. M., Peiro J. M., (2001). The demand-Control-Support model, locus of control and job dissatisfaction: a longitudinal study. *Work and Stress*, 15:2; 97-114.

Preston D.B.(1995). Marital status, gender roles, stress, and health in the elderly. *Journal Health Care Women International*, 16; 149-65.

Sauter S.L., Murphy L.R. (1995). *Organizational Risk factors for job stress*. Washington, DC: American Psychological Association.

Schechter J, Green LW, Olsen L, Kruse K, Cargo M. (1997). Application of Karasek's demand/control model a Canadian occupational setting including shift workers during a period of reorganization and downsizing. *American Journal of Health Promotion*, 11; 394-399.

Scherzer T., Rugulies R., Krause N. (2005). Work-related pain and injury and barriers to workers' compensation among Las Vegas hotel room cleaners. *American Journal of Public Health*, 95: 3.

Searle B.J, Bright J.E.H., Bochner S. (1999). Testing the 3-factor model of occupational stress: the impact of demands, control and social support on mail sorting task. *Work and stress*, 13; 268 – 279.

Schrijvers CT, Van de Mheen HD, Stronks K, et al. (1998). Socioeconomic inequalities in health in the working population: the contribution of working conditions. *International Journal of Epidemiology*, 27; 1011–18.

Sleye H. (1984). *Stress of life*. Revised edition.

Siegrist J.(2004). Social Variations in Health Expectancy in Europe. An ESF Scientific Programme. (Elektronisk).Last retrieved on 2006/11. From- <http://www.uni-duesseldorf.de/health/FinalReport.pdf>.

Quine L. (1998). Effects of stress in an NHS trust: a study. *Nursing Standard*; 13, 36-4.

Theorell Tores (1994).The demand –control-support model for studying health in relation to the work environment-an interactive model. Behaviour and psychological aspects of prevention. *Stress research reports No 245*, 1994. 1:st international teaching seminar in behavioural medicine, Karolinska institute, WHO psychosocial center, Stockholm.

Tsutsumi A., Kayaba K., Tsutsumi K., Igarashi M. (2001). Association between job strain and prevalence of hypertension: a cross sectional analysis in a Japanese working population with a wide range of occupations: the Jichi Medical School cohort study. *Journal of Occupational Environmental Medicine*, 58; 367-373.

Veldhoven Van M., Jonge J., Broersen S. , Kompier M., Meijman T.(2002). Specific relationships between psychosocial job conditions and job-related stress: A three-level analytic approach. *Work and stress*, 16; 207 – 228.

Von Onciul J. (1996). ABC of work related disorders: Stress at work. *British Medical Journal*, 313; 745-748.

Warren Shepell (2003). Canadian retail and hospitality employees face growing stress issues. *Depression/Personal Stress Widely-Reported Among Retail and Hospitality Employees WarrenShepell Research Group Report*. (Elektronisk).Last retrieved on 2006/9. From <http://www.warrenshepell.com/newsroom/pr-20031212.asp>.

Weiler A. European Foundation for the Improvement of Living and Working Conditions. Annual review of working conditions in the EU: 2004–2005

WHO. (2004) *Ottawa Charter for Health Promotion*, 1986 . World Health Organisation. (Elektronic). www.euro.who.int

WHO (2003). *The Solid Facts- The social determinants of health*, World Health Organisation. Second edition.

Widerszal-Bazyl M., Piotr Radkiewicz, Hans-Martin Hasselhorn, Paul Conway and the NEXT-Study Group. The Job Demand-Control-Support Model applied to analysis of nursing work in ten European countries.

Wilkinson, R., Marmot, M.(1998). *Social Determinants of Health: The Solid Facts*. Geneva: World Health Organization.

Wilkinson, R. (1997) Socio-economic determinants of health: health inequalities: relative or absolute material standards? *British Medical Journal*, 314;591.

Appendix 1. Letter to research participants

Till dig som arbetar inom hotellrörelsen!

Stress på arbetet i den form den finns idag är ett ganska modernt fenomen. Rent allmänt ses hotellet ibland som en arbetsplats, där arbetsmiljön kan vara stressande. Graden av stress kan påverkas av en rad olika förhållanden, vilka kan vara svåra att särskilja. Huvudsyftet med den här enkätundersökningen är att studera stressnivån bland hotellanställda och att försöka identifiera olika förhållanden som orsakar stress. Avsikten är att på sikt minska stressens inverkan på hälsa och arbete.

Ett projekt inom det här området pågår i Malmö. Enkäten skickas ut till dig och ca. 200 andra hotellanställda vid 10 hotell i Malmö.

Ditt deltagande i undersökningen är naturligtvis frivilligt, men det är betydelsefullt för undersökningens kvalitet, att Du som får frågeformuläret besvarar det.

Dina svar kommer att vara anonyma!

Ingen annan än undertecknad med handledare kommer att ha tillgång till enkäterna.

Sedan Du fyllt i enkäten, lägger Du så snart som möjligt och helst inom en vecka frågeformuläret i en plomberad låda, som finns i receptionen. Eftersom undersökningen görs anonymt kan inte frågeformuläret kopplas till Dig som person. Svaren kommer därför också att databehandlas utan identitetsuppgifter.

Om Du har några problem att besvara frågorna, ring då gärna tel. 070 824 44 09, säkrast kl. 12.00-14.00 måndag-torsdag. Jag som gör undersökningen heter Evelina Kormilecaite och skall använda resultatet till min magisteruppsats i folkhälsovetenskap vid Högskolan Kristianstad.

Trots att vi förorsakar Dig ett visst besvär, hoppas vi att Du vill hjälpa oss att öka kunskapen om vad som orsakar stress och hur stress eventuellt kan påverka hälsan och det vardagliga livet bland hotellanställda.

Tack på förhand för Din medverkan!

Malmö, mars 2005

Evelina Storm Pallesen