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Department of Psychology

Master of Science Program in Psychology

**Exhaustion among university students: A cross-sectional
study of self-esteem, social support, gender, physical
activity and being in nature as predictors**

Rebecka Hektor

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Supervisor: Lars-Gunnar Lundh

Examiner: Erwin Apitzsch

Abstract

The purpose of the study was to examine how common exhaustion was among students of Lund's University. An additional aim was to investigate to what extent the factors self-esteem, gender, social support, physical activity and being in nature could predict exhaustion in the sample. A cross-sectional web-survey consisting of Karolinska Exhaustion Disorder Scale (KEDS), Rosenberg's Self-esteem Scale (RSES), The Multidimensional Scale of Perceived Social Support (MSPSS), Saltin Grimby Physical Activity Scale (SGPALS), 4 questions concerning being in nature, as well as demographic questions were used. The sample consisted of 253 participants (76.3% women and 23.3% men), most were students of the Social Sciences Faculty and the Faculty of Medicine. The results showed that self-esteem, social support from friends, gender and physical activity were significant predictors of exhaustion. Self-esteem was clearly the strongest predictor. 33% of the participants had exhaustion scores above cutoff, indicating high levels of exhaustion. There were significant differences in level of exhaustion between women and men, with higher levels of exhaustion among women. The results to a great extent corroborated previous research; however longitudinal designs are requested to investigate the direction of the associations.

Keywords: exhaustion, self-esteem, gender, social support, physical activity, being in nature, burnout, students

Sammanfattning

Syftet med studien var att undersöka hur vanligt utmattning var bland studenter vid Lunds universitet. Ytterligare ett mål var att undersöka i vilken grad faktorerna självkänsla, socialt stöd, fysisk aktivitet, kön och att vara i naturen kunde predicera utmattning i urvalet. En tvärsnitts- webenkät bestående av Karolinska Exhaustion Disorder Scale (KEDS), Rosenberg's Self-esteem Scale (RSES), The Multidimensional Scale of Perceived Social Support (MSPSS), Saltin Grimby Physical Activity Scale (SGPALS), 4 frågor angående att vara i naturen samt demografiska frågor användes. Urvalet bestod av 253 deltagare (76,3% kvinnor och 23,3% män), de flesta var studenter på samhällsvetenskapliga och medicinska fakulteterna. Resultaten visade att självkänsla, socialt stöd från vänner, kön samt fysisk aktivitet var signifikanta prediktorer för utmattning. Självkänsla var utan tvekan den starkaste prediktorn. 33% av deltagarna hade utmattningspoäng över gränsvärdet, vilket innebär höga nivåer av utmattning. Det fanns signifikanta skillnader i utmattningsnivå mellan kvinnor och män, med högre utmattningsnivåer bland kvinnor. Resultaten bekräftade till stor del tidigare forskning, men longitudinell forskning efterfrågas för att undersöka riktningen i sambanden.

Nyckelord: utmattning, självkänsla, socialt stöd, kön, fysisk aktivitet, att vara i naturen, utbrändhet, studenter

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Introduction

Stress-related health issues are a major problem for most societies today (World Health Organization [WHO], 2001). Between 1999 and 2014 long-term sick leave because of psychiatric illnesses, has increased from 18% to 35% of the long-term sick leaves in Sweden. The most common psychiatric illnesses that result in sickness absence in Sweden are different stress reactions, depression and anxiety (Försäkringskassan, 2015).

Exhaustion is a stress-related disorder, and can be seen as the result of being exposed to chronic stressors for a long period of time, without the possibility of recovery. It results in problems such as emotional exhaustion and irritability, physical symptoms such as stomachache and headache, and cognitive difficulties such as problems with memory and concentration (Åsberg et al., 2010).

Research on burnout has historically focused on people-oriented occupations such as health care workers (Maslach & Jackson, 1981). However, research suggests that university students are at risk of developing burnout as well (Cecil, McHale, Hart, & Laidlaw, 2014; Dahlin & Runeson, 2007; Fares et al., 2016; Rudman & Gustavsson, 2012). University students experience a variety of different stressors; finding new friends, coping with new responsibilities and adapting to new situations and a high workload (Seyedfatemi, Tafreshi, & Hagani, 2007) and they are constantly exposed to a conflict between academic and social demands (Pluut, Curseu, & Ilies, 2015).

It is of importance to understand the underlying factors contributing to stress and exhaustion among university students, in order to prevent exhaustion in the long run. Thus, the aim of this study is to investigate whether the factors social support, self-esteem, gender, physical activity and being in nature can predict exhaustion among university students.

Definitions of burnout and exhaustion

There are a few concepts that are commonly used interchangeably but that are defined in different ways. The term burnout emerged in the professions of human service institutions and it refers to the effect of being exposed to chronic stressors at work. People working with helping others are at a risk of getting emotionally exhausted, or burned out. Burnout is characterized by a lack of energy, feelings of cynicism and a decrease in passion for one's job. Exhaustion can be defined as a lack of individual resources, both physical and emotional. Cynicism is an interpersonal component, and refers to a detached attitude to the job. Inefficacy is defined as a lack of productivity and a decreased passion for the work. Burnout

leads to feelings of negativity towards oneself and clients at work, and burned out workers tend to be unhappy (Maslach & Jackson, 1981).

The term exhaustion has also been used, but there was no clear diagnosis specifically for burnout or exhaustion. The diagnoses that have been commonly used are the ICD-10 diagnoses depressive episode (F32) or reaction to severe stress (F43). In 2003 The Swedish National Board of Health and Welfare (NBHW) suggested a new diagnosis called exhaustion disorder (F43.8A), which would better describe the problems (Socialstyrelsen, 2003). The criteria for exhaustion disorder are presented in Table 1.

Table 1

Diagnostic criteria for stress-related exhaustion disorder as proposed by the Swedish National Board of Health and Welfare

A Physical and mental symptoms of exhaustion of at least two weeks' duration. The symptoms have developed in response to one or more identifiable stressors, which have been present for at least six months

B Markedly reduced mental energy, which is manifested by reduced initiative, lack of endurance, or increase in time needed for recovery after mental effort

C At least four of the following symptoms have been present most of the day, nearly every day, during the same 2-week period:

1 Persistent complaints of impaired memory

2 Markedly reduced capacity to tolerate demands or to work under time pressure

3 Emotional instability or irritability

4 Insomnia or hypersomnia

5 Persistent complaints of physical weakness or fatigue

6 Physical symptoms such as muscular pain, chest pain, palpitations, gastrointestinal problems, vertigo or increased sensitivity to sounds

D The symptoms cause clinically significant distress or impairment in social, occupational or other important areas of functioning

E The symptoms are not due to the direct physiological effects of a substance (such as drug abuse or medication) or a general medical condition (such as hypothyroidism, diabetes and infectious disease)

F If criteria for major depressive disorder, dysthymic disorder or generalized anxiety disorder are met, exhaustion disorder is considered a co-morbid condition

(Glise, 2014, pp.14).

Theories of stress and exhaustion

The link between work environment and exhaustion is presumably stress. There is some confusion concerning the word stress. In physics stress is the pressure that results in a reaction; “strain”. However, when it comes to mental stress, the word stress is often used in reference to the reaction, which has resulted in the use of the word stressor when referring to the threatening situation or event. In literature the word stress is still used both in reference to the stressor and the stress reaction (Jonsdottir & Folkow, 2013).

Biological stress theory. Evolution has prepared human beings for stressors through adapting the physiological reactions to stressful stimuli. The body prepares for an acute stress situation through activating the limbic system and the sympathetic branch of the autonomous nervous system which results in changes in different bodily processes (Jonsdottir & Folkow, 2013). A stressful event activates the hypothalamic-pituitary-adrenal (HPA) axis which results in increased cortisol-levels. Cortisol mobilizes energy to help the individual cope with stressful situations. The hormonal system also regulates hormones such as adrenaline, which activates and prepares the body for a fight or flight reaction (Kalat, 2013). Selye (1951) argued that a response to stressful stimuli always follows the same pattern, which he called the General Adaptation Syndrome. Selye describes the way of responding to stressors in three stages; alarm-reaction, resistance and exhaustion. However, according to Jonsdottir and Folkow (2013) stress reactions vary among individuals, because of the unique set of experiences and biological conditions that each human being carries. The advanced neocortex of humans evaluates and interprets the same situation in different ways, resulting in various reactions. Human beings can suppress and regulate emotions which help us cope with the different situations that we encounter (Jonsdottir & Folkow, 2013).

The bodily activation when encountering a stressful event is important and protects the individual against dangers through preparing to react. However, when the body’s stress system is activated too frequently and for too long periods it results in stress related health problems such as exhaustion disorder (Åsberg et al., 2010).

The biological adaptation to stressors has been referred to as allostasis which is the maintenance of stability in bodily processes when exposed to changes. An adequate allostatic response is activated by a stressor, helps the individual handle the situation, and when danger is gone deactivation of the system occurs, and the individual can rest. When there is an excessive stimulation of the allostatic system allostatic load occurs. Allostatic load can be the result of too frequent activation of the system, an inability to shut off the allostatic activation after stressful events or inadequate responses of the allostatic systems, which affects other

bodily systems. Because of the strain caused by the allostatic load the individual is at risk of developing diseases such as coronary heart disease, viral infections and asthma, but also psychiatric illnesses such as depression and PTSD (McEwen, 1998).

Phases of exhaustion. Stress reactions are natural consequences of being exposed to threats and challenges. Long-term exposure to stressors without time for recovery can lead to physical as well as psychiatric illnesses, such as exhaustion disorder. The course of exhaustion can be divided into three different phases; the prodromal phase, the acute phase and the recovery phase. The prodromal phase is a “warning phase” with symptoms such as back- and neck pain, sleeping problems, stomach problems, concentration difficulties as well as irritability and panic. The symptoms can come and go, and if the person reduces the stressors or increases the time for recovery the symptoms can disappear. The acute phase often starts suddenly and is characterized by extreme physical and mental exhaustion without the ability to recover after sleep and rest. Cognitive difficulties such as problems with memory, orientation and finding words are common, as well as sensitivity to sensory impressions. The recovery phase is a slow recuperation of the symptoms, and the individual often continues to be sensitive to stress. Comorbidity in the form of depression and anxiety is common (Åsberg et al., 2010).

The demand-control-support theory of job stress. The job demand – control model was created by Karasek (1979) and it is one of the most influential theories concerning work stress and organizational health and wellbeing. The theory was later expanded by adding social support to the model (Karasek & Theorell, 1990). The model now consists of the three dimensions psychological demands (job demands), decision latitude (job control) and social support. Job demands are the psychological stressors of work, such as personal conflicts, time pressure and high work load. Too many and high demands can cause strain, while too low demands may lead to a lack of motivation. Decision latitude is the amount of control that a worker has over his/her tasks and work performance. It includes social authority to make decisions as well as high levels of skills which contributes to the ability to utilize specific skills depending on the situation. Social support refers to helpful social interaction from colleagues and supervisors. It is thought to promote health through acting as a buffer between stressors and strain, affecting physiological responses of the individual as well as promoting coping strategies. According to Karasek and Theorell (1990) social support also enhances a positive self-identity, which contributes to health.

When job demands are high and job control and/or social support are low job strain occurs. When there are high job demands but also high control and social support workers

tend to be the most healthy and satisfied. Apart from the health effects the levels of demands, control and support affect productivity, skill utilization and motivation (Karasek & Theorell, 1990).

Lee, Puig, and Lee (2012) studied the relationships between demand-control and burnout among students in South Korea. The results showed that demand was positively correlated with burnout, while control was negatively correlated with burnout. The association between demand-control imbalance and burnout was even stronger, suggesting that the students experiencing both high demands and low control were at greater risk of experiencing burnout.

The effort-reward imbalance model. According to the effort-reward imbalance model (ERI) stress reactions arise as a result of the interaction between the individual and the psychosocial work environment. There ought to be a balance between work-related costs (effort) and occupational gains (reward). Effort represents work demands, such as finishing a piece of work on a time limit. Reward consists of material gains such as money, but also job security, job opportunities, respect and self-esteem. An imbalance of the two factors could lead to emotional distress (Siegrist, 1996).

According to the model individuals react differently to an effort-reward imbalance. Some individuals are characterized by overcommitment; an excessive commitment to work and an extreme striving for approval. Overcommitted individuals are at greater risk of putting themselves in situations with high demands, where they have to put down a lot of effort, and they also tend to expect more and higher rewards than other people. Overcommitment is seen as a moderator which increases the health effects produced by an effort-reward imbalance (Siegrist et al., 2004).

Feuerhahn, Kühnel and Kudielka (2012) as well as Bakker, Killmer, Siegrist and Schaufeli (2000) found that effort-reward imbalance was significantly positively correlated to emotional exhaustion. Bakker et al. (2000) also found a significant positive correlation between ERI and depersonalization. Rasmussen et al. (2016) found that high effort was positively associated with emotional exhaustion and low reward was negatively associated with emotional exhaustion. However; the interaction of high effort-low reward could not predict emotional exhaustion.

Lee et al. (2012) studied the associations between effort-reward and burnout among students in South Korea. They found significant associations between effort, reward and burnout, as well as between effort-reward imbalance and burnout. Effort was positively correlated with burnout; with the strongest correlation with the exhaustion subscale of the

burnout measure. Reward was negatively related to burnout, suggesting that a low level of reward increases the risk of burnout. An effort-reward imbalance, however, had the greatest association with burnout, suggesting that the combination of high effort and low reward puts students in greater risk of experiencing burnout.

The conservation of resources theory. The conservation of resources theory is based on the assumption that people attempt to gain and retain resources and that the loss of resources threatens the individual. According to the model, stress can be defined as a threat of loss of resources, actual loss of resources or a lack of resource gain when investing resources. Examples of resources are self-esteem, socioeconomic status and money. According to the theory people will try to gain resources when not stressed, and when facing stressful events the individual will try to minimize the loss of resources (Hobfoll, 1989).

According to Alarcon, Edwards and Menke (2011) coping is central to the conservation of resources theory. When facing a stressful situation with many resources the demands of the situation are experienced as less threatening which results in a more adequate coping. Alarcon et al. (2011) argue that burnout is the result of a continuous loss of resources. When losing resources coping strategies become malfunctioning, which results in further loss of resources.

Academic burnout

Much of the research on burnout has focused on work-related burnout, but burnout can also be a consequence of other stressors than work-related (Maslach, 1981). Pines (1987) studied burnout in marriage, and work-family conflicts have also been associated with exhaustion (Canivet, Östergren, & Lindeberg, 2010). These findings suggest that exhaustion ought to be studied in a wider context than work, and that there are many possible stressors in different areas of life. As well as stressors in the family situation, some studies show that students are at risk of burnout (Cecil et al., 2014; Fares et al., 2016; Rudman & Gustavsson, 2012).

Law (2007) compared exhaustion levels of Business University students with levels found in high-stress occupations such as teachers, health care and human service workers, social workers and accountants. He found that the mean value of exhaustion in the student group was higher than in all except one of the high-stress occupation groups; public accountants during a busy season. Although the study was conducted during the final weeks of the semester Law argues that the levels of exhaustions found in the study are noteworthy

and have important implications for the organization of university educations. Law also studied whether or not coursework involvement and workload were significant predictors of exhaustion. Both factors were significant as predictors and explained 17% of the variance in exhaustion. However, coursework involvement had a higher predictive value. Although coursework involvement often is seen as a positive characteristic, the downside is the risk of developing exhaustion. Law also discusses the relatively high freedom that students have, which can be both productive and destructive, depending on individual differences among the students.

One hypothesis concerning how and why burnout is developed among students is the transition into a new professional role. Professional socialization is described as the assimilation of competence, attitudes and values that are associated with a specific profession. It starts during education and continues throughout work life (Andersson, 1993). The socialization into the new role has been described as a “transition shock” and it can cause stressful reactions (Cherniss, 1980, reference in Rudman & Gustavsson, 2012).

The effects of academic burnout can have long-term effects. There is research suggesting that burnout during higher education (nursing school) is associated with lower performance and control over occupational tasks one year after finishing school, especially for those who showed signs of burnout early in the education. Burnout during nursing school was also associated with making less use of research in the clinical work as well as an increased risk of considering leaving the profession. The research also showed that burnout levels increased during the education, and were the highest during the last year of nursing school (Rudman & Gustavsson, 2012). This suggests that academic burnout has implications in the long run, and that understanding burnout among university students is important to be able to reduce burnout at later stages in life.

In 2014 Sweden’s Association of Student Unions evaluated the sick leave system for students in Sweden. According to the study students that need to be on sick leave encounter a variety of problems. It is not possible to be on part-time sick leave, which means that students with health problems either have to continue studying full-time or be on full time sick leave. That leads to problems with a stepwise return to studies, which means that it is common with a longer way back to studies than necessary. Some students even drop out of school because of the difficulties with coming back. According to the study the support and routines for students who return to their studies after a period of sick leave are often deficient. The student support services of the universities request better rehabilitation plans and individual study plans for students who have been on sick leave. Individual study plans could increase the

adjustment to students' capacities which would increase the possibility of managing their studies (Sveriges Förenade Studentkårer, [SFS], 2014).

First year university students are entering a new phase of life, and encounter new challenges and stressors, such as moving to a new city, adapting to a new way of studying and getting to know new friends (Seyedfatemi et al., 2007). The deficiencies of sick leave systems may also aggravate the situations of already vulnerable students. This makes university students an important group to study in relation to exhaustion, to be able to understand, help and prevent university students from burning out before they have even entered work-life.

Levels of burnout

Exhaustion disorder is a relatively new diagnosis which means there are no epidemiological studies of the prevalence (Glise, 2014). However, there is a variety of studies examining levels of burnout, from different countries and populations. In a working population in Sweden it was found that 13% had a high level of burnout, measured with the Shirom Melamed Burnout Questionnaire. Women had higher burnout ratings than men, which partly could be explained by work related and life situational factors (Norlund et al., 2010).

Fares et al. (2016) examined how common burnout was among medical students in Lebanon. They found that 62% of the students suffered from stress (measured with GHQ-12) and 75% from burnout (measured with Maslach Burnout Inventory-Student version). First year students had higher scores, as well as women. The authors do not discuss reasons for the higher level of burnout than stress found in the study, which is a limitation of the study. Cecil et al. (2014) examined burnout among medical students in the UK. Around 55% were emotionally exhausted and a slightly smaller number of students reported high levels of depersonalization.

In a study of medical students in Brazil 15% of the students rated levels of burnout above cutoff on the Maslach Burnout Inventory – Human Services Survey (MBI-HSS), although as many as 58% were at risk of developing burnout (Gilson de Cavalcante, Hercílio Ribeiro, Paulo César, Beatriz de Cavalcante, & Gilson Holanda, 2016).

Mazurkiewicz, Korenstein, Fallar, and Ripp (2012) reported that 71% of pre-clinical medical students in New York had burnout levels above cutoff on the Maslach Burnout Inventory – General Survey (MBI-GS). 22% of preclinical dental students in Turkey showed signs of emotional exhaustion, and between 16 – 18% showed signs of cynicism and low

academic efficacy. Burnout was measured with the Maslach Burnout Inventory- Student Version (Atalayin, Balkis, Tezel, Onal, & Kayrak, 2015).

In summary, the levels of burnout vary in different populations and countries, also depending on what measures have been used. Burnout has been measured with different self-rating instruments, which makes it possible to find how many participants are above a cutoff level, but not whether or not they would fulfill the criteria for exhaustion disorder. It is clear though, that exhaustion or burnout is a problem, both in work-life and among students.

Risk factors for burnout and exhaustion

Burnout has been associated with a variety of factors, sometimes in cross-sectional studies and sometimes in longitudinal studies. The longitudinal designs can investigate the cause and effect of the factors associated with burnout, while it is not possible to claim causal relationships from the results of cross-sectional studies. Five factors that have been associated with burnout or exhaustion will be presented below; social support, self-esteem, physical activity, gender and being in nature.

Social support. Cobb (1976) defines social support as “information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations.” (p. 300).

Social support can also be seen as “a social network’s provision of psychological and material resources *intended to benefit an individual’s ability to cope with stress.*” (Cohen, 2004, p.676). Cohen (2004) suggests that social support can be divided into three types of support; instrumental, informational, and emotional support. Material aid such as practical or financial help is instrumental support. Informational support includes the provision of information with the aim of enhancing the individual’s ability to cope. Emotional support refers to someone listening empathically and showing care and trust. Previous research has differentiated perceived social support and received social support (Mitchell, Evans, Rees, & Hardy, 2014).

Social support as a main effect or a stress buffer. Cohen and Wills (1985) propose two theories of how social support affects health and wellbeing; the main effect theory and the buffering hypothesis. According to the main effect theory social support will be beneficial for an individual’s wellbeing regardless of the existence of a stressful event or not. Social support directly affects wellbeing, since it provides people with positive experiences, feelings of self-worth and stability.

The buffering hypothesis suggests that social support may act as a stress buffer, so that social support is beneficial for health only when experiencing a stressful event. Stress buffering can operate at different points in the assumed link between a stressor and the pathological response. It may prevent a stress appraisal, by making the individual evaluate the situation as less threatening and oneself as more capable of handling the situation. Stress buffering can also occur between the stress experience and the pathological reactions, by making the individual reappraise the responses and find alternative reactions (Cohen & Wills, 1985).

There is evidence of social support as a main effect on stress experience, but also of social support as a buffer of stress. In a study by Mitchell et al. (2014) it was found that psychological reactions to an injury were lower in the cases that reported high levels of perceived social support, which suggests that *perceived* social support acts as a stress buffer. Perceived social support was the experience that one had available support if needed. The main effects of perceived social support could explain between 3 and 11% of psychological reactions. The authors also investigated the effect of received social support on psychological reaction to a physical injury. Received social support was the extent to which someone had given them social support. In that case social support did not act as a buffer; it acted solely as a main effect. The main effect of *received* social support could explain between 9 and 21% of psychological reactions to a physical injury. If the social support matched the injury stressor (e.g., isolation, loss of confidence) the effect of social support was greater. That is called the stress-support matching hypothesis.

Empirical studies of the association between social support and burnout. Olwage and Mostert (2014) studied predictors of burnout among university students in South Africa, and they found that the levels of social support from parents significantly predicted burnout, as well as engagement, which is often seen as the opposite of burnout. Low levels of parental support were associated with burnout, while high levels of parental support were associated with engagement. However, the authors did not find any significant effect of *general* support on burnout. Moreover, Yang and Farn (2005) examined predictors of burnout among students in a technical-vocational college in Taiwan. They found that social support, self-efficacy and femininity were significant predictors of burnout. Social support was negatively correlated with burnout, meaning that the students with low social support had high rates on burnout-scales. This suggests that social support may be an important factor in helping students to cope with stressful events. Similar results were found by Bonafé, Maroco and Campos (2014), who investigated the role of social support and demographic factors in predicting burnout

among dentistry students. They found that social support, gender, housing and student performance could be used as predictors of burnout. Low levels of social support were associated with higher levels of burnout.

Yildirim (2008) studied counsellors in Turkish schools, to see if social support and sociodemographical factors were associated with burnout. The results showed negative associations between social support from principals, colleagues and friends, and burnout, so that low levels of social support predicted high levels of burnout. Support from partner was only associated with the personal accomplishment dimension and family support was associated with personal accomplishment and emotional exhaustion.

Alarcon et al. (2011) found that social support was associated with problem-focused coping, suggesting that social support might enhance coping strategies. Social support was not a direct predictor of burnout or engagement. However, the authors suggest that it has an indirect effect on engagement through coping strategies.

In summary, social support is portrayed as a broad and complex phenomenon, with several categories and types of social support. Some research point to associations between social support and burnout, however what type of social support that has been associated with burnout varies among studies. Some studies also suggest that there is no direct association between social support and burnout; rather that social support affects other factors such as coping and self-evaluation, which could have an effect on burnout.

Self-esteem. Self-esteem is a global evaluation of the self; attitudes and judgments about worthiness and competence. Self-esteem affects emotions, cognitions and behavior so that a person with a high self-esteem shows more acceptance, respect and positive attitudes towards oneself, while a person with a low self-esteem has a more negative and unaccepting attitude towards the self (Rosenberg, 1965). Deci and Ryan (1995) have argued that self-esteem is a more complex construct than portrayed by Rosenberg's global definition of self-esteem. Deci and Ryan present different aspects of self-esteem such as contingent self-esteem and true self-esteem, where the first is feelings and evaluations of oneself based on some standard or expectation. True self-esteem refers to a more stable attitude towards oneself, which is based on a more secure and robust self. A contingent self-esteem is associated with the need for performance to be worthy, while a true self-esteem is developed when acting in accordance with ones values.

Afari, Ward and Khine (2012) suggested that self-esteem is developed within a social context because of the comparisons made with people of the same group or culture. A high

perceived performance in comparison to other group members would lead to higher confidence and perception of self-worth.

Rosse, Boss, Johnson, and Crown (1991) studied two groups consisting of police officers and hospital workers. In total the samples included 1,657 participants, with a majority in the police officer group. Rosse et al. (1991) found significant negative correlations ($r=-.45$ for hospital workers, $r=-.37$ for police) between self-esteem (measured with RSES) and burnout (measured with MBI); those with low self-esteem rated higher levels of burnout. Of the three components of Maslach's burnout-definition emotional exhaustion had the strongest correlation with self-esteem. They also found that gender did not play a role in the relationship; the correlation was as strong for men as for women. Furthermore they tested whether self-esteem could be a moderator of burnout and work characteristics, but the results showed that the effect was a main effect rather than an interaction effect, suggesting that self-esteem has a direct effect on burnout. It is not clear whether self-esteem is an antecedent or consequence of burnout; presumably both.

Rosse et al. (1991) suggested that people with low self-esteem have problems in the interaction with other people, and thus experience incompetence in relationships, as well as having fewer resources to cope with stress or other challenges. This could make people with low self-esteem more vulnerable to burnout.

In a study of Iranian and Turkish teachers it was found that burnout was associated with professional self-esteem (Khezerlou, 2017). Khezerlou (2017) suggested that low self-esteem posits an individual at greater risk of developing mental health problems, such as exhaustion or burnout, because they are more emotionally vulnerable.

Dahlin, Joneborg and Runeson (2007) examined the association between performance-based self-esteem (PBSE) and the burnout dimensions exhaustion and disengagement. They found that 41.7% of the participants had performance-based self-esteem, which was higher than in other populations. Women had higher exhaustion rates than men. Exhaustion was positively correlated with performance-based self-esteem ($r=.37$) and with disengagement ($r=.30$).

Altogether the research found point to a negative association between self-esteem and burnout, where high levels of self-esteem have been associated with low levels of burnout. The direction of the association is not clear, however.

Physical activity. According to the World Health Organization (“Physical activity”, 2017, para.1) physical activity can be defined as “any bodily movement produced by skeletal muscles that requires energy expenditure.”. It is well documented that physical activity has a

positive effect on health and wellbeing. It does not only prevent illnesses, but it also contributes to feelings of wellness and a higher quality of life (Ohuruogu, 2016). Physical activity affects the levels of serotonin, dopamine, noradrenaline and endorphins, which contributes to feelings of wellbeing, alertness and pain relief. Physical activity also affects memory and ability to concentrate, which could be explained by an increase in brain cells in hippocampus and the prefrontal cortex. Physical activity has been associated with a lower risk of developing diseases such as cardiovascular diseases, diabetes, dementia, anxiety and depression (Hansen & Sundberg, 2014). Mental health in general is also associated with physical activity. Kim et al. (2012) found a curvilinear relationship between physical activity and mental health, so that between 2.5 and 7.5 hours of physical activity per week was an optimal threshold for better mental health. Moreover, Cecil et al. (2014) found that physical activity was associated with lower emotional exhaustion and higher personal accomplishment, in a university student population in the UK.

Jonsdottir, Rödger, Hadzibajramovic, Börjesson, and Ahlborg (2010) used a longitudinal design to investigate the associations between physical activity during leisure time and perceived stress, burnout, depression and anxiety. All factors were measured using self-report instruments. Physical activity was measured with SGPALS. Participants rating performance of light, moderate or vigorous physical activity were more likely to rate low levels of experienced stress, burnout, depression and anxiety than those who rated sedentary. At a two year follow up the symptoms of depression, stress and burnout were lower for those who had engaged in physical activity than for those who were sedentary. Moderate to vigorous physical activity was also associated with lower anxiety ratings two years later.

Toker and Biron (2012) also used a longitudinal design to examine the role of physical activity in increasing or decreasing job burnout and depression. They found that depression and burnout was highest among the participants who were not physically active and that the participants who were more physically active were not as often and as depressed or burned out.

Lindwall, Gerber, Jonsdottir, Börjesson, and Ahlborg (2014) studied the relationships of change in physical activity with changes in depression, anxiety and burnout. They used a longitudinal design and used 4 measurements over a period of 6 years. The participants were health care workers. Lindwall et al. (2014) found that there was a relationship between change in physical activity and the three measures of mental health so that being more physically active correlated with lower levels of depression, anxiety and burnout.

Armon (2014) investigated the relationship between type D (distressed) personality and job burnout and looked at physical activity as a possible moderator. She found a relationship between type D personality and job burnout, but those who were more physically active had lower scores of burnout than those who were not physically active, suggesting that physical activity might be a moderator in the association.

Henwood, Tuckett, and Turner (2012) studied nurses in New Zealand and Australia to see if there was a difference in health in the nurses who engaged in workplace physical activity and those who engaged in leisure time physical activity. They found a positive association between leisure physical activity and health, but not for workplace physical activity.

In summary, physical activity has been associated with both physical and mental health, and research suggests that burnout levels are affected by physical activity too.

Gender. Gender is one of the most common categorizations that people experience. With that categorization comes different expectations of how to behave and react, which also affects the health and wellbeing of men and women (Magnusson & Marecek, 2010). Based on that it is of interest to understand what role gender plays in the experience of exhaustion.

Canivet et al. (2010) investigated the gender differences in conflict between work and family and its relationship with exhaustion. Work-to-family conflict (WFC) is when the job affects the family negatively by reducing time spent with the family, as well as impairing the quality of the time spent with the family. Family-to-work conflict (FWC) is when family worries or obligations affect work negatively, by distractions, too little sleep or too little time spent on the job. Canivet et al. (2010) found differences between men and women in most measures. Women spent more time doing household chores, reported lower general health than men, were more prone to smoking, had a lower socioeconomic status, experienced job strain to a higher degree and were more likely to live alone. Men were more likely to have a less social life, they worked overtime more often and they were more likely to be high-risk alcohol consumers. Work-to-family conflict was more common for men while the opposite was more common for women; however both WFC and FWC predicted exhaustion for both men and women. Even though WFC was more common among men, it was a stronger predictor for exhaustion in women. The explanatory power of WFC and FWC was stronger in women, as 22% of the variance in exhaustion could be explained by the model for women as compared with 14% for men. Women also experienced exhaustion more often than men; approximately 16% of women experienced exhaustion while only 8% of men did.

Although most students do not live in a family the research by Canivet et al. (2010) helps clarifying the differences in how factors contribute to exhaustion in men and women. The study also elucidates the difference in pressure or strains that men and women experience, as factors such as low socioeconomic status, high job strain and spending more time on household work was more common among women.

Anitei, Chraif, and Ionitã (2015) studied whether there were any gender differences in the relationship between workload and burnout. They found significant differences between men and women; women experienced higher workload and burnout than men. Dahlin et al. (2007) found higher exhaustion rates in women than men in a student population.

Fares et al. (2016) found that women rated higher levels of experienced stress and burnout than men in a population of medical students in Lebanon. Norlund et al. (2010) found that women had higher levels of burnout than men, especially in the group aged 35-44 years. Glise (2014) found that women were over-represented in the diagnosis of exhaustion disorder, but there were no differences in the course of the illness and how it developed.

There is research suggesting gender differences in exhaustion, but there are also contradicting findings. Onuoha and Akintola (2016) studied academic burnout in Nigeria, and found no gender differences in the reports of burnout. Cecil et al. (2014) studied burnout among university students in the UK and the results showed that men rated higher levels of depersonalization and lower levels of personal accomplishment, suggesting that men were at greater risk of experiencing burnout than women.

In a meta-analysis by Purvanova and Muros (2010) it was found that the research conducted regarding gender differences in burnout has yielded inconsistent results. According to the results of the meta-analysis there is no clear difference between overall burnout scores of women and men, however, women rate slightly higher scores on emotional exhaustion while men have slightly higher scores on depersonalization. The results also showed a tendency towards greater gender differences in burnout scores in the USA than in the European Union.

The results concerning the association between gender and exhaustion are ambiguous, with some research pointing to gender differences while others could not find any differences. Furthermore, the gender differences found vary in direction, with some studies showing higher levels of burnout among women and others among men. According to the Swedish agency for health technology assessment and assessment of social services (SBU, 2014) men and women in similar work situations tend to have similar levels of exhaustion and depression.

Being in nature. The concepts nature and natural environments are used in reference to non-man-made environments or areas created to resemble non-man-made environments. Natural environments often include either water or some type of vegetation (Ulrich et al., 1991).

Being in green space has been associated with health benefits. Maas et al. (2009) found that the prevalence of 15 out of 24 physical and mental illnesses was lower for people in areas with a high proportion of green space. The relationship was strongest for anxiety and depression, and the associations were stronger in lower socioeconomic groups. The results suggest that access to green space has a positive effect on health, particularly mental health. The authors suggest several explanations for the relationship; green space may enhance recovery from stress and attention fatigue, access to green space may increase physical activity which positively affects health, the air quality is better and green space may increase social activities (Maas et al., 2009).

Nielsen and Hansen (2007) also found that short distance to a garden or other green areas was associated with lower levels of experienced stress. The authors suggest that access to green areas increases the likelihood of engaging in outdoor activities and in using healthy ways of traveling, such as bicycling or walking, which could explain the lower stress levels.

Attention restoration theory. According to the attention restoration theory natural environments help a person restore from attention fatigue. Directed attention is needed to be able to focus on a task; it is a key to effectiveness. Directed attention is tiring and leads to attention fatigue. To restore the attention ability one needs rest, both in the form of sleep, but also in attending to the world in a different way than with directed attention, attention that doesn't demand effort. Being in nature doesn't require directed attention, according to Kaplan (1995). There is more than one reason for the restorative effects of nature; being away, freeing one's mind from activities that need directed attention, the environment is rich in a way that it is fascinating and engages an individual in looking, feeling and experiencing (Kaplan, 1995).

Ulrich's psycho-evolutionary theory. Human beings like to relax in natural environments because nature plays an evolutionary important role for us. Nature has secured human beings' survival through water and open spaces, as well as places to hide. Humans have adapted to the natural environment, but not yet to the urban environment, thus we have an innate way of responding to the natural environment, which is with positive feelings and restoration. Ulrich describes it as an unconscious emotional reaction to the environment (Ulrich et al., 1991).

Ulrich et al. (1991) found that stress recovery was faster and more complete when exposed to a natural environment rather than an urban. In this study the participants watched videotapes of the surroundings, meaning that even though the participants did not physically experience the environment, the recovery was better (measured with both self-rating and a variety of physiological measures). The videotapes of the urban areas were associated with a sympathetic mobilization, suggesting that the body made itself ready for risk, in the form of defense setting of the body.

Ewert et al. (2016) measured the levels of cortisol before and after visiting a natural environment; a track around a lake, with a forest surrounding. The results showed that the levels of cortisol were reduced from the first to the second measure, suggesting that spending time in nature reduces stress levels. It is not clear, however, if it is the physical activity, the leisure time or the presence of nature that reduces the experienced stress.

Sahlin, Ahlborg, Matuszczyk, and Grahn (2014) studied the effects a nature-based stress management course on women at risk for stress related problems. The results showed lower burnout scores and stress related symptoms, decreased long-term sick-leaves as well as an increased ability to work. Apart from individuals learning coping strategies and tools, nature played an important role in the reduction of burnout and stress symptoms.

To sum up, previous research points to an association between spending time in nature and stress related health problems. It is not clear, however, whether it is the nature in itself that matters, or other factors such as physical activity, leisure time and relaxation that contribute to the association with stress. Furthermore, the research concerning the link between being in nature and exhaustion specifically is limited.

Summary

Exhaustion is a relatively new concept; however it is closely related to the concept burnout. There is a large amount of research concerning work-related burnout but studies on academic burnout are more limited, even though research on the topic has increased the last years. Most studies investigating risk factors for burnout or exhaustion are cross-sectional. There are some longitudinal studies, primarily when it comes to physical activity and being in nature. Because of the high number of cross-sectional studies it is difficult to know what role the factors have in the associations with burnout.

Purpose

Based on the research and theories outlined above the factors social support, self-esteem, gender, physical activity and being in nature are possible predictors of exhaustion. Some factors have well-documented associations with burnout or exhaustion, while some factors are less studied or the results are contradictory. Since the research on exhaustion among university students is limited, it is an important group to study. If academic burnout has an effect in the long run, it is of importance to understand the underlying factors to be able to prevent burnout.

Thus, the purpose of this study is to examine how common exhaustion is among university students and to what extent the factors social support, self-esteem, physical activity, gender and being in nature can predict exhaustion.

Research questions

1. How common is exhaustion among students at Lund University?
2. Can the factors social support, self-esteem, physical activity, gender and being in nature be used to predict exhaustion?
3. To what extent can the factors predict exhaustion?
4. Which factor is the best predictor of exhaustion?

Method

Both the terms burnout and exhaustion have been used throughout the thesis, because of the variations in studies measuring the concepts. The present study measured exhaustion, depending on the choice of the instrument (KEDS), while much of the research that has been conducted has measured burnout. Even though the concepts are slightly different they are related and similar, which justifies the choice to include studies using both terms.

Firstly, a literature review was conducted to see what factors had been found associated with burnout and exhaustion in previous research, as well as what instruments had been used to measure the constructs. The databases Lubsearch, Google Scholar and PsycInfo were utilized to collect research articles, and the references of articles were also reviewed to find relevant research.

Based on the literature review different possible predictors of burnout emerged and the ones used in this research were chosen based on the aim of the study and availability of instruments as well as psychometric properties of the instruments. Due to problems finding

instruments in Swedish the options were limited. Based on the literature review and discussions with the supervisor a purpose was set.

The population university students, was chosen based on the fact that the research on university students and burnout or exhaustion was limited compared to the extensive mass of research on work-related burnout. A majority of the research done on academic burnout was done on medical students, so this study was designed to examine exhaustion among students of all faculties at Lund University, to increase the generalizability of the results.

Design and procedure

The study used a quantitative approach, and a cross-sectional design was chosen because of the restriction in time for the thesis. A longitudinal design would have given the possibility to make causal inferences, however it would be too time-consuming. A number of demographic control variables were included to strengthen the design and decrease the risk of Type II error (Shadish, Cook, & Campbell, 2002). A web-survey was used since it is quick and easy to administrate, and available at any time. It is also an inexpensive way of collecting data and an effective way of getting a large number of participants.

When the structure of the questionnaire had been formed the questionnaire was pilot-tested to detect any ambiguities as well as to find out how long time the questionnaire would take to fill in. 5 students participated in the pilot-survey (in the middle of January, 17-20) and based on the comments a few questions were clarified, and a couple of demographic questions were added. No analysis was done on the pilot-responses, because of the low number of participants. All questions were made mandatory to eliminate non-response analyses. The survey was distributed from the end of January to the end of February 2017.

Participants

Inclusion criteria for the study were that the participants should be full time students (not distance students) at Lund University. Distance students were excluded because of an assumption that distance students can have other primary occupations, which means they are not the target population. The inclusion criteria “full time student” was there to exclude those who were part-time students, as that could affect the results as well.

Students at Lund University were chosen to delimit the population and to limit the confounding variables in the study. To be able to detect possible differences between students of different faculties only students from Lund University were accepted, since other universities may have other faculties which would make a comparison difficult.

253 individuals participated in the survey. 76.3% were women and 23.3% were men. 1 person (.4%) reported gender “other”. 62.5% were between 21-25 years old and 20% were between 26 and 30. 36% studied at the Social Science’s Faculty and 47% at the Faculty of Medicine. The rest of the participants were students from the School of Economics and Management, the Faculty of Engineering, the Natural Science Faculty, the Faculty of Law, and the Faculty of Humanities and Theology. 37% lived with a partner, 27% alone, 11% with parents and 26% in a corridor. 47% of the participants had an extra job.

Sampling

A convenience sampling method was used. Recruitment of participants was done mainly through information on social media (Facebook). The information was spread among friends and in Facebook-groups that were related to the university. Administrators of different educations were also asked to send out information by e-mail to the students, and those who were willing to, sent the information to the student-emails. Around 1,000 e-mails were sent to students at the Faculty of Medicine, the Social Science’s Faculty and the Faculty of Engineering. A minimum of 100 participants was anticipated.

Instruments

The survey consisted of demographical questions (age, gender, field of study, the number of semesters studied, living conditions, extra job or not), the Karolinska Exhaustion Disorder Scale (KEDS), Rosenberg Self-esteem Scale (RSES), Saltin Grimby Physical Activity Level Scale (SGPALS), the Multidimensional Scale of Perceived Social Support (MSPSS) as well as four questions concerning being in nature. Although gender was only measured with one question, the concept gender will be used throughout the thesis, in reference to the social categorization of men, women and others, rather than the categorization of biological sexes.

Karolinska Exhaustion Disorder Scale – KEDS. The Karolinska Exhaustion Disorder Scale was chosen as a measure of exhaustion since it shows good reliability and validity and it was developed specifically to measure symptoms of exhaustion disorder, which makes the instrument appropriate for the current thesis. KEDS consists of 9 items with response alternatives ranging from 0-6, meaning that the total result can range from 0 to 54. The items were developed based on the criteria for exhaustion disorder, as well as on symptoms that many patients with exhaustion disorder reported. The 9 items measure ability to concentrate, memory, physical stamina, mental stamina, recovery, sleep, sensory

impressions, experience of demands and irritation and anger. KEDS has shown good validity and reliability for clinical settings as well as in research. Besèr et al. (2014) validated the instrument through examining the ratings of two groups; one consisting of patients diagnosed with exhaustion disorder (N=203), and a group consisting of healthy controls (N=117). Factor analysis was done and the results indicated that the scale was unidimensional. Internal consistency was measured through Cronbachs alpha. For all participants $\alpha = .94$, in the patient group $\alpha = .74$ and in the control group $\alpha = .81$. Discriminative validity was found to be very good; the results showed that 19 can be used as a cut-off for exhaustion problems, with a 95% specificity and sensitivity.

The internal consistency of KEDS in this study was $\alpha = .84$.

Rosenberg self-esteem scale – RSES. The Rosenberg self-esteem scale is a global measure of self-esteem which has been used in a variety of studies and among different populations. The scale measures a unidimensional concept. The scale consists of 10 items that are measured using a 4-point, 5-point or 7-point Likert scale (Gray-Little, Williams, & Hancock, 1997). In this study the 4-point scale was used. The RSES was chosen since it is a widely used and well developed instrument to measure self-esteem, and it shows good psychometric properties.

Validation studies of the RSES have found good psychometric properties; $\alpha = .86$; $\alpha = .88$; $\alpha = .81$; (Collison, Banbury & Lusher, 2016; Fleming & Courtney, 1984; Meurer, Luft, Benedetti & Mazo, 2012). Fleming and Courtney also found test-retest reliability to be .82.

Gray-Little et al. (1997) reported the following psychometric properties: Cronbach's alpha was $\alpha = .88$, inter-item correlations ranged from $r_{4,9} = .21$ to $r_{1,2} = .66$ and the item-total correlations ranged from $r_{T4} = .61$ to $r_{T6} = .76$. Gray-Little et al. (1997) also did an item response theory analysis of the RSES to complement and refine the analyses done with other psychometric procedures. Gray-Little et al.'s finding corroborate that the scale is unidimensional as proposed by Rosenberg (1965). The results also indicated that the 10 factors were not equally discriminating. The items 8, 9 and 10 were slightly less related to the construct and were, therefore, not as good at differentiating levels of self-esteem as the other items. A weighted scoring of the scale would therefore yield more reliable scores, however it would complicate the counting of scores. Gray-Little et al. also discuss the limited gains in reliability that a weighted scoring would yield.

The unidimensionality of the RSES has been questioned in some research. Ang, Neubronner, Oh, and Leong (2006) found that the scale consisted of two factors; positive and negative self-esteem, and that the positive self-esteem factor could be used as a predictor of

self-efficacy and mastery-goal orientation, while the negative self-esteem factor could predict disruptive behavior.

The internal consistency of RSES in this study was $\alpha=.90$, which is considered excellent reliability.

Saltin Grimby Physical Activity Level Scale – SGPALS. The Saltin Grimby Physical Activity Level Scale was developed by Saltin and Grimby (1968) who used the instrument to evaluate the physical activity level of middle-aged male former athletes. The instrument has thereafter been used in a variety of studies in the Nordic countries, with some modifications of the instrument in some cases (Grimby et al., 2015). The SGPALS was used since it attempts to measure levels of physical activity, despite the limitation of consisting of only one question. This was due to problems finding available and free instruments in Swedish.

The scale consists of alternatives regarding level of physical activity: mostly sedentary, light physical activity (e.g., walking or bicycling to work), moderate physical activity (e.g., swimming, playing tennis and running) and vigorous physical activity (activities with high intensity several times a week) (Grimby et al., 2015).

Aires, Selmer, and Thelle (2003) evaluated the validity of SGPALS in their population based study of 332,182 men and women in Norway, by comparing the ratings of the questionnaire with biological measures. The biological measures were blood lipids, body mass index and blood pressure. The authors also investigated the consistency of the associations over a period of 25 years. The results showed that BMI and serum cholesterol were associated with the measures of physical activity, and the association was consistent over the 25 years.

Jonsdottir, Rödger, Hadzibajramovic, Börjesson, and Ahlborg (2010) used the instrument in their prospective study on physical activity and mental health. This suggests that the scale is a good measure for studying the relationship between physical activity and exhaustion too.

Sjøøl, Thomsen, Schroll and Andersen (2003) found that 83% of the participants rated the same physical activity group when they filled in SGPALS one month after they had filled it in the first time. That indicated decent test-retest reliability.

Multidimensional scale of Perceived Social Support - MSPSS. The MSPSS measures an individual's perceived social support through three dimensions; family, friends and significant others. The scale was chosen since it is a measure of perceived social support, which was attempted to be measured in the thesis, and the instrument shows good

psychometric properties. There are 12 items with a seven point Likert scale resulting in a score range between 12 and 84 with the higher results indicating a higher perceived social support. Zimet, Powell, Farley, Werkman, and Berkoff (1990) investigated the psychometric properties of the original MSPSS. They found internal consistency between $\alpha=.81$ and $\alpha=.98$ for the subscales and the whole scale, which indicates good or excellent internal reliability. Test-retest values also indicated good stability (.72 to .85). The factor analysis also showed that the three subscales are distinct factors.

The Swedish version of MSPSS was validated in 2013 and shows good psychometric properties. The internal consistency ranged between $\alpha=.91$ and $\alpha=.95$ for all scales. The factor structure of the three dimensions was reproduced. The scales showed clinically significant differences (Cohen's d ranging from .54 to .90) between the main group (nursing students) and the reference group (women with hirsutism), indicating discriminative validity. Test-retest showed satisfactory reproducibility. The item and scale scores showed a skewed distribution, with a ceiling effect. The majority of the participants of the validation study were women (Ekbäck, Lindberg, Benzein, & Årestedt, 2013).

The internal consistency of MSPSS whole scale in this study was $\alpha=.93$, and the Cronbach's alpha values for the friends, family and significant other- subscales were .94, .92 and .92, respectively, which is considered excellent reliability.

Being in nature. No instrument regarding being in nature could be found, so four questions were constructed by the author and were then discussed together with the supervisor. The questions regarded how much time was spent in nature, what the purpose of being in nature was and if the person liked being in nature or not. Before the questions, examples of what "being in nature" was, was given. The examples included both non-man-made environments and environments resembling non-made made environments, such as parks and gardens. The questions were pilot-tested on five students to see whether the response alternatives were sufficient, and if aspects of being in nature were missed. Some alternative responses were added after the pilot. No statistical analyses were done on the pilot-answers because of the low number of participants.

The reliability of being in nature was tested through Spearman's correlation between the questions "How often do you spend time in nature?" and "How many hours per week do you spend in nature?". The correlation was $r=.65$, indicating acceptable reliability.

Statistical analyses

SPSS version 24 was used for the statistical analyses. Firstly, descriptive data-analyses (mean, standard deviation) and tests of basic assumptions such as normality and homogeneity of variance were done. The reliability of the scales was assessed through Cronbach's alpha. Spearman's correlation was used to test the reliability of the questions concerning being in nature. The question "How often do you spend time in nature?" was used for the assessment of correlations and in the regression analysis because of extreme outliers in the other question (How many hours per week do you spend in nature?).

Pearson's correlations were used to assess the associations between the factors. Spearman's correlations were also assessed because of the violations of assumptions and no clear differences were found, hence the Pearson's correlations were reported. A *t*-test was used to test whether or not there were any differences between men's and women's ratings of exhaustion. A one-way ANOVA was used to test if there were any differences in exhaustion level between the different physical activity response-groups. Tests of basic assumptions (linearity, normality, multicollinearity and homoscedasticity) for a multiple regression analysis were done, and since the assumptions of linearity and normality were violated for the MSPSS scale and subscales, the scales were dichotomized into categories of low social support and high social support. The physical activity scale was also dichotomized into sedentary- medium physical activity and vigorous physical activity, based on the differences between the groups found in the ANOVA. A standard multiple regression analysis was used to investigate to what extent the factors social support, self-esteem, physical activity, gender and being in nature could predict exhaustion.

Ethical considerations

Four ethical principles in research within humanistic and social sciences are presented by the Swedish Research Council (Vetenskapsrådet, 2002). The four principles are information, informed consent, confidentiality and utility and they have the purpose of protecting the rights and wellbeing of participants. The researcher is obliged to inform the participants about the purpose of the study and the conditions of participation. Moreover the participants should be informed that participation is voluntary and that they have the right to terminate participation at any time. When the participant has received sufficient information the participant should give his/her informed consent. All material concerning individual participants ought to be confidential and sensitive data that can be connected to an individual

must be kept inaccessible for unauthorized. The collected data can only be used for the purpose of the research, and not for other utilities.

To adhere to the principles information regarding purpose of the study, anonymity and confidentiality and the right to terminate participation at any time, was presented before the questions of the survey (see Appendix). The participants of the study were anonymous so no data could be connected to any individual. The results were only presented at a group level.

Researchers ought to weigh the expected contribution of the research against the possible risks that the participants are exposed to (Vetenskapsrådet, 2002). In this study the risks of participating were considered very small, while the possible gain of the research is a greater understanding of exhaustion among students, which in the long run can lead to prevention of exhaustion. An e-mail address to the author was included in the information to give the opportunity to give feedback or complaints. If necessary the author could have directed participants in need of help.

It is also of ethical concern that research contributes to society through possible gains in knowledge. Although burnout and exhaustion are relatively well-studied, research on academic burnout is more limited (Lin, & Huang, 2014). As mentioned earlier burnout during higher education may have long-term effects (Rudman & Gustavsson, 2012), which makes it important to study exhaustion among university students. Research points to high levels of burnout and exhaustion among students (Cecil et al., 2014; Fares et al., 2016; Mazurkiewicz et al., 2012), which makes it pertinent to investigate what factors are associated with exhaustion, to increase the understanding and possibility to prevent stress-related health problems. Moreover, knowledge concerning exhaustion is of importance for clinical and organizational psychologists who most probably will work with and treat individuals and groups suffering from stress-related mental health problems.

Results

The initial descriptive analyses yielded a mean value of 14.83 on the exhaustion scale (KEDS), with a standard deviation of 7.91 ($M=14.83$, $SD=7.91$), indicating that the mean of the sample scores is below the cutoff of 19. The distribution of the scores is shown in Figure 1.

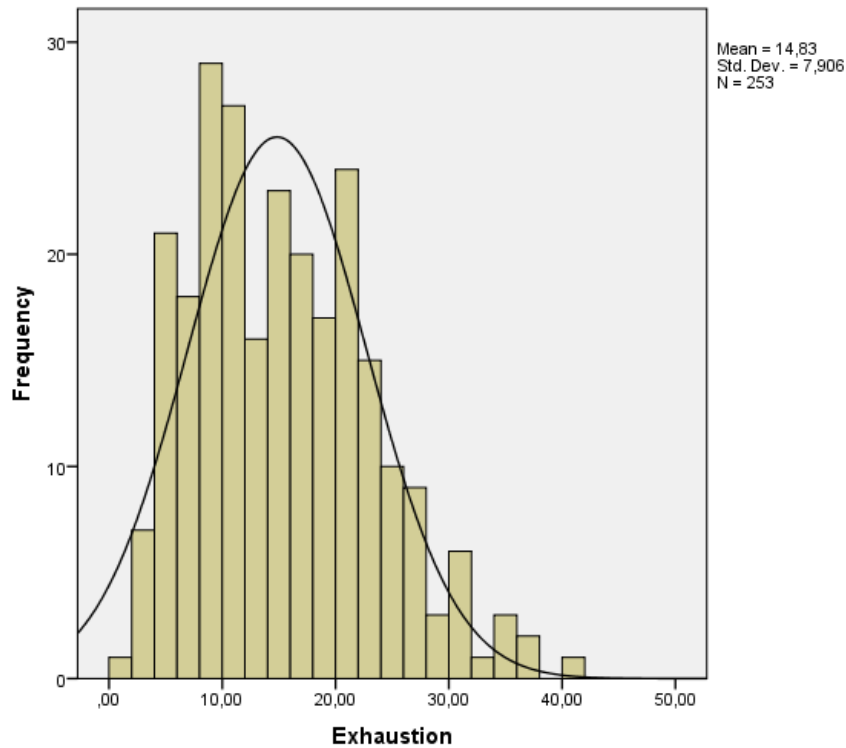


Figure 1. Distribution of scores on Karolinska Exhaustion Disorder Scale (KEDS).

A *t*-test for independent samples was used to investigate whether there was a significant difference in exhaustion scores between men and women. The results showed that women ($M=15.8$, $SD=8.0$) had significantly higher exhaustion scores than men ($M=11.9$, $SD=6.7$), $t(250)=3.4$, $p=.001$, $d=.53$. The effect size indicates a medium effect size.

33% of the sample had scores above the cutoff of 19. 37% of women had scores above cutoff and 14% of men had scores above cutoff. Table 2 shows descriptive data on the KEDS as a function of sociodemographic variables.

Table 2

Means (SD) on the Karolinska Exhaustion Disorder Scale (KEDS) as a function of sociodemographic variables.

Demographic variable	<i>n</i> (%)	Mean (KEDS)	<i>SD</i> (KEDS)
Overall Sample	253(100%)	14.83	7.91
Gender			
Female	193(76.3%)	15.8	8.0
Male	59(23.3%)	11.9	6.7
Other	1(.4%)		
Faculty			
Social Science's Faculty	90(35.6%)	15.02	7.64
Faculty of Medicine	120(47.4%)	15.05	8.03
Faculty of Engineering	23(9.1%)	12.91	7.62
Other	20(7.9%)		
Age			
Under 20	19(7.5%)	12.53	7.86
21-25	158(62.5%)	14.91	7.79
26-30	51(20.2%)	14.80	8.32
31-35	11(4.3%)	17.27	7.28
36-40	7(2.8%)	17.71	8.12
Over 40	7(2.8%)	12.86	8.91
Living conditions			
Alone	67(26.5%)	15.58	8.57
With partner	94(37.2%)	14.74	7.75
With parents	27(10.7%)	14.93	9.03
In a corridor/with friends	65(25.7%)	14.15	7.00
Extra job			
Yes	120(47.4%)	15.21	7.38
No	133(52.6%)	14.50	8.36
Purpose of time in nature			
Getting somewhere	41(16.2%)	16.15	7.77
Walking or running	157(62.1%)	14.73	8.18
Outdoor recreational activities	32(12.6%)	14.34	7.31
Resting	20(7.9%)	14.25	7.32
Work	3(1.2%)	11.67	7.09
Level of physical activity			
Sedentary	11(4.3%)	17.73	6.97
Light physical activity	98(38.7%)	15.67	8.13
Medium physical activity	100(39.5%)	15.19	7.46
Vigorous physical activity	44(17.4%)	11.43	7.88

Reliability

Cronbach's alpha was used to measure the internal consistency; the extent to which the items of a scale measure the same construct. The values ranged from $\alpha=.84$ to $\alpha=.94$,

which is considered good reliability. Cronbach's alpha was not measured for the SGPALS because of the fact that there is only one question, and not for the questions regarding being in nature due to a limited number of questions. The internal consistency of KEDS, RSES and MSPSS is presented in Table 3.

Table 3
Internal consistency

Instrument	Cronbach's α
KEDS	.84
RSES	.90
MSPSS- whole scale	.93
MSPSS- Friends	.94
MSPSS- Family	.92
MSPSS- Significant others	.92

To test the reliability of the questions concerning being in nature, the non-parametric Spearman's correlation was used. The correlation between the questions "How often do you spend time in a nature?" and "How many hours per week do you spend in nature?" was $r=.65$, $p<.01$, which can be considered acceptable reliability. The two questions are to a great extent measuring the same concept.

Correlations

Pearson's correlation was used to investigate associations between exhaustion and social support, self-esteem, being in nature, gender and physical activity. Since some of the factors violated the basic assumptions Spearman's correlations were tested too, but there were no clear differences, so Pearson's correlations are reported below. To reduce the risk of Type I errors a Bonferroni correction was made ($.1/36=.0028$). The correlations are significant at $p\leq.0028$. Significant correlations were found between exhaustion and all the other factors except for being in nature and social support from significant others, although there were tendencies for those factors too; $r=-.13$, $p=.039$ and $r=-.16$, $p=.01$ respectively. The strongest correlation was found between exhaustion and self-esteem ($r=-.52$, $p<.001$), indicating a large association. Gender was coded as 0=women, 1=men. This means that the correlation between KEDS and gender ($r=-.21^*$) shows that women are more likely to have high scores on KEDS. The correlation between gender and RSES ($r=.21^*$) means that men have higher rates on RSES. Correlations between the different factors are shown in Table 4.

Table 4

Correlations between exhaustion, being in nature, physical activity, gender, self-esteem, social support-whole scale, social support from significant others, social support from family and social support from friends.

Variables	KEDS	BiN	SGPALS	Gender	RSES	MSPSS	SS-SO	SS-Fam	SS-Fri
KEDS	-	-.13	-.20*	-.21*	-.52*	-.32*	-.16	-.26*	-.35*
BiN		-	.21	-.20*	.09	.19*	.19	.20*	.10
SGPALS			-	.04	.13	.13	.04	.17	.10
Gender				-	.21*	-.12	-.19*	-.05	-.06
RSES					-	.43*	.21*	.45*	.38*
MSPSS						-	.80*	.85*	.83*
SS-SO							-	.52*	.52*
SS-Fam								-	.56*
SS-Fri									-

* $p < .0028$

KEDS=Karolinska Exhaustion Disorder Scale, BiN=Being in Nature, SGPALS=Saltin Grimby Physical Activity Level Scale, RSES=Rosenberg Self-esteem Scale, MSPSS=Multidimensional Scale of Perceived Social Support, SS-Fri=Social Support from Friends, SS-Fam=Social Support from Family, SS-SO=Social Support from Significant other.

Physical activity and exhaustion

A one way independent ANOVA was used to test whether there were any differences in exhaustion rates depending on the level of physical activity. This was done to find the most suitable way to dichotomize physical activity for the regression analysis. The sedentary group consisted of only 11 participants, so that group was included in the “light physical activity” group, now called “sedentary to light physical activity”. The results showed a significant difference in exhaustion in the three physical activity groups: $F(2,25)=5.31$, $p=.006$, partial $\eta^2=.04$. Tukey’s post hoc test showed that the vigorous physical activity group ($M=11.43$, $SD=7.88$) rated significantly lower levels of exhaustion compared to the “medium physical activity” group ($M=15.19$, $SD=7.46$) ($p<.05$) and the “sedentary to light physical activity” group ($M=15.88$, $SD=8.01$) ($p<.01$). There were no significant differences between the “medium physical activity” group and the “sedentary to light physical activity” group. Figure 2 shows the scores on KEDS for the different physical activity groups.

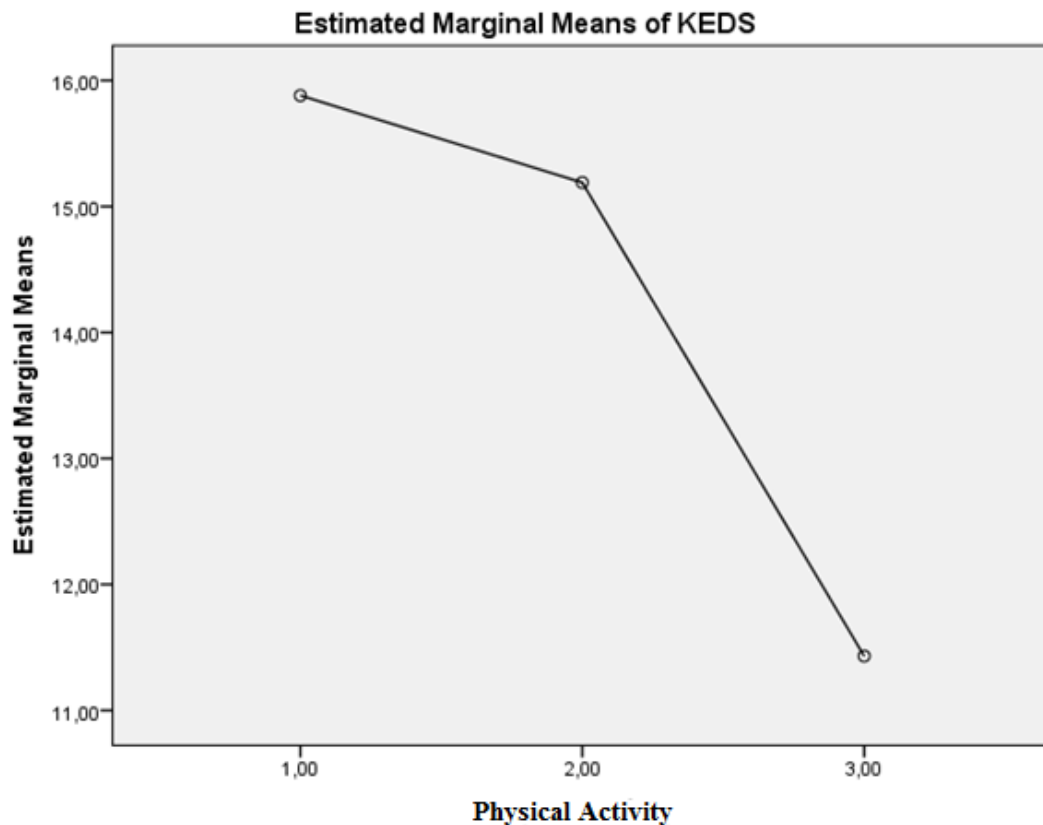


Figure 2. Scores on KEDS for the different physical activity groups. 1= sedentary to low physical activity, 2= medium physical activity, 3=vigorous physical activity.

Multiple regression analysis

A multiple regression analysis was done to predict exhaustion from self-esteem, social support, gender, physical activity and being in nature. Preliminary analyses were performed to test that the assumptions of multiple regression analysis was fulfilled. To increase the generalizability of the results a decent sample size is needed (Pallant, 2013). Tabachnick and Fidell (2013) suggest that the needed sample size can be calculated through the formula $N > 50 + 8m$ where m is the number of independent variables in the analyses. In this analysis there are 7 independent variables which means that $N=106$ would be an acceptable sample size. The number of participants of the study is 253 which clearly exceed an acceptable sample size. Another criterion for using a multiple regression analysis is lack of multicollinearity; high correlations ($r \geq .9$) between the independent variables (Pallant, 2013). Multicollinearity was not found. Two outliers (scores above or below 3 standard deviations from mean) were excluded from the regression analysis.

The assumptions of normality and linearity were violated for the MSPSS-scale. Therefore the MSPSS scales were dichotomized to groups of low and high social support. Physical activity was also dichotomized to the alternatives “sedentary to medium physical activity”, and “vigorous physical activity”, based on the significant differences between the vigorous physical activity group and the other groups, which was found in the ANOVA. There were linear associations between the other predictor- and dependent variables, as shown by the correlations as well as scatterplots. The residuals were normally distributed and the assumption of homoscedasticity was also fulfilled.

The regression analysis showed significant results, $F(7,244)=18.28, p<.001$. The variables could explain 33% of the variance in exhaustion ($R^2=.33$). The strongest predictor was self-esteem, $\beta=-.45, t=-7.59, p<.001$. Other significant predictors were social support from friends, $\beta=-.15, t=-2.46, p=.014$, gender, $\beta=-.13, t=-2.27, p=.024$, and physical activity, $\beta=-.12, t=-2.26, p=.025$. Social support from significant others was not significant as a predictor, however there was a tendency, $\beta=-.11, t=-1.86, p=.065$. Being in nature and social support from family were not significant as predictors of exhaustion either. Table 5 shows the values of the regression analysis.

Table 5
Multiple regression analysis

Variable	<i>b</i>	<i>SE b</i>	β	<i>p</i>
Constant	38.05	2.57		.000
Self-esteem	-.66	.09	-.45***	.000
Gender	-2.37	1.05	-.13*	.024
Physical Activity	-2.52	1.12	-.12*	.025
Social Support-Friends	-2.28	.93	-.15*	.014
Social Support- Significant other	-1.78	.96	-.11	.064
Social Support- Family	-1.62	1.01	-.10	.108
Being in Nature	-.74	.51	-.08	.153

* $p<.05$, ** $p<.01$, *** $p<.001$. Adjusted $R^2=.33$

b=Unstandardized coefficient, *SE b*= Standard error of measurement, β = Standardized coefficient

Social support from family was significantly negatively correlated with exhaustion ($r=-.26, p<.001$), however, it was not a significant predictor of exhaustion in the regression analysis. Social support from significant others was not significant in the correlation analysis ($r=-.16, p=.01$) or the regression analysis ($\beta=-.11, p=.065$), while support from friends was significant in both the correlation analysis and the regression analysis. All three factors were significantly correlated with self-esteem, however the correlation between social support from family and self-esteem ($r=.45, p<.001$) was the strongest. Because of that pattern a partial

correlation between social support from family and exhaustion, with self-esteem as a control was done. The correlation was not significant ($r=-.04$).

Discussion

The purpose of the study was to investigate how common exhaustion was among students at Lund University, as well as to what extent the factors self-esteem, social support, gender, physical activity and being in nature could predict exhaustion.

The results show that 33% of the participants in the current study have exhaustion scores above cutoff, which is higher than in some other studies (Atalayin et al., 2015; Gilson de Cavalcante et al., 2016; Norlund et al., 2010). Fares et al. (2016) and Mazurkiewicz et al. (2012) however, found that the level of exhaustion among university students was as high as 75% and 71% respectively and Cecil et al. (2014) found that 55% had exhaustion scores above cutoff. The current study uses KEDS as a measurement of exhaustion, while many other studies have used different versions of the MBI. That could be an explanation of the differences; however the results of the other studies differ as well. The studies are done in different countries and with different populations which could also explain the differences in results. The type of educations of the student populations may also differ, as well as the time of the administration of the questionnaires. The survey of the current thesis was administrated during a period which is not associated with a higher workload than normal (the end of January 2017 to the end of February 2017), which means that the exhaustion levels could be even higher during a period of exams or during the end of a semester.

37% of women and 14% of men have exhaustion scores above cutoff, which shows that signs of exhaustion are more common among women, in accordance with some previous results (Anitei et al., 2015; Canivet et al., 2010; Dahlin et al., 2007). There is a significant difference in the ratings of exhaustion between men and women, with a medium effect size, indicating that there are considerable gender differences. The results are contradictory to the results found in the meta-analysis by Purvanova and Muros (2010), who found that there are no clear gender differences when it comes to levels of exhaustion. However, they also found that the results of studies are inconsistent, with some showing higher levels of exhaustion for women, while some show higher levels of exhaustion for men.

Self-esteem, social support from friends, gender and physical activity are significant predictors of exhaustion. Self-esteem is clearly the strongest predictor, while the other three predictors have lower and similar β -values, which suggest that the other factors are not as

strong predictors. Being in nature and social support from family and significant others are not significant predictors, although there are tendencies, especially for the latter factor. The explained variance of the predictors of exhaustion is 33%, which is a relatively low figure. However, it is higher than the explained variance found by Olwage and Mostert (2014) in their study on self-esteem, self-efficacy, career decision making difficulties and social support as predictors of burnout and engagement among university students (R^2 between .01 and .15 for the different regression models). Bonafé et al. (2014) found an explained variance of $R^2=.37$ for the predictors social support and demographic variables on burnout, which is similar to the explained variance found in the current thesis. The results point to the complexity of the concept exhaustion, and suggest that there are many factors that play an important role in predicting exhaustion. There are associations between burnout and personality (Chieh-Heng, & Shu-Rung, 2016), self-efficacy (Wang, Liu, & Wang, 2015), social activities (Fares et al., 2016) and career-decision making difficulties (Olwage & Mostert, 2014), suggesting that there are many factors apart from the ones studied in the current thesis, that are associated with exhaustion.

The effort-reward imbalance model states that there ought to be a balance between effort and reward; otherwise strain occurs (Siegrist, 1996). The high levels of exhaustion among university students might be a result of an imbalance between effort and reward. The rewards that students get for their efforts are grades, possibly encouragement from teachers, and perhaps better chances of getting a job. The latter is a delayed reward which makes it possible that it is not even perceived as a reward, but rather as a worry. Not all students get the other rewards either, and are still putting down a lot of effort on their studies, which would lead to an effort-reward imbalance. It is possible that students with less academic resources such as intelligence, study techniques and support put down a lot of effort and getting few rewards, which would result in an effort-reward imbalance and psychological strain, perhaps in the form of exhaustion.

It is reasonable to believe that the amount of job control that students experience differ, both due to the differences in educations and individual factors. Some educations might increase the feeling of control through well-planned schedules and clear curriculums, while other educations may decrease the feeling of control through a lack of structure. It is also possible that individual factors affect the experience of control. Students with high self-esteem might experience greater control than students with low self-esteem, because of a greater trust in themselves. Students with a high perceived social support might also feel more in control than students with low social support.

The results of the study can also be understood in light of the conservation of resources theory. Self-esteem, social support and physical activity can be seen as resources that protect the individual through enhancing better coping strategies, which decreases the risk of experiencing burnout. The significant correlation between social support and self-esteem, which could be explained by the conservation of resources theory, as a loss in one of the resources could have resulted in a loss of the other, which together could have affected exhaustion levels.

Self-esteem. Self-esteem is the strongest predictor of exhaustion ($\beta=-.45, p<.001$). Although the strongest predictor the β -value is relatively low, indicating restrictions in the predictive value. However, the correlation found between self-esteem and exhaustion is $r=-.52, p<.001$, which is slightly higher than the correlations found by Rosse et al. (1991). They found correlations of $r=-.45$ (hospital workers) $r=-.37$ (police officers) between self-esteem and burnout. The difference might be owing to the differences of the samples. It is possible that self-esteem plays a more important role in exhaustion among university students than in a sample consisting of police officers and hospital workers. Rosse et al. also used RSES to measure self-esteem which means that the difference in results cannot be explained by different measurements of self-esteem. However, Rosse et al. used MBI as a measure of burnout, while the current study used KEDS to measure exhaustion, which might be an explanation for the differences.

There are different explanations for the association between self-esteem and exhaustion. It is possible that a low self-esteem increases the risk of experiencing exhaustion, and that a high self-esteem acts as a protector. It is also possible that experiencing exhaustion leads to a reduction in self-esteem. Moreover, the effort-reward imbalance model suggests that self-esteem can be seen as a reward of efforts. High rewards have been associated with lower levels of burnout (Lee et al., 2012) which could be an explanation for the association between self-esteem and exhaustion found in the current thesis.

Another explanation is that a third variable is responsible for the association. For example, low performance could affect both the self-esteem and risk of experiencing exhaustion. Low performance has been associated with exhaustion (Maslach & Leiter, 2008) in previous research. Self-efficacy is another concept related to exhaustion. Research has shown that self-esteem and self-efficacy are associated with each other (Afari et al., 2012), and self-efficacy has been found to be a predictor of burnout (Olwage & Mostert, 2014). Therefore, self-efficacy could have a role in explaining the association between self-esteem and exhaustion too.

Rosse et al. (1991) suggested that people with low self-esteem often experience problems in relationships, which would make them more vulnerable to burnout. There was a correlation of $r=.43$, $p<.001$ between social support and self-esteem in the current study, which indicates a moderate association between the two factors. It is possible that people with low self-esteem have difficulties with social interaction, which affects the perception of social support and increases the risk for exhaustion. It is also possible, however, that having low levels of social support results in a low self-esteem, which would increase the risk for exhaustion. Afari et al. (2012) suggested that self-esteem is developed within a social context, which could explain the association between social support and self-esteem found in this study. Evaluating oneself negatively in comparison to other group members might lead to difficulties in having mutual relationships, which would decrease the perception of social support.

Gender. Gender is a significant predictor of burnout, with a β -value of $-.13$, which means that being a woman significantly predicts higher levels of exhaustion. Significant differences between men's and women's ratings of exhaustion are also found in the t -test, which contradicts the results of the meta-analysis by Purvanova and Muros (2010). However, many previous studies have found differences between men and women's ratings of exhaustion (Anitei et al., 2015; Canivet et al., 2010; Dahlin et al., 2007; Fares et al., 2016; Glise, 2014; Norlund et al., 2010). In most studies women have had higher levels of exhaustion, which is in accordance with the results of the thesis. The results are important as they point to an inequality between men and women, and the results create a need for further research to be able to understand the mechanisms of and the reasons for the difference.

The predictive value of gender on exhaustion is limited. The gender differences found in the t -test have a medium effect size, which indicates clear differences. The low β -value found in the regression analysis can possibly be explained by the fact that self-esteem and gender were correlated ($r=.21$, $p<.0028$), meaning that men have higher levels of self-esteem than women. Self-esteem had the highest predictive value in the regression analysis which means that although gender had a unique predictive value, parts of the gender differences in exhaustion levels could be explained by the lower self-esteem of women.

According to SBU (2014) levels of exhaustion tend to be similar for men and women in similar work situations. It is reasonable to believe that the study situations of men and women at universities are similar, which makes the results of the present study particularly interesting, since there were clear differences between the exhaustion levels of men and

women. Further research focusing on the underlying mechanisms of the gender differences in exhaustion is needed.

Based on the social expectations of women and men, they are probably interpreted and treated in different ways, which could lead to different levels of exhaustion. Social expectations of how men and women should behave might have unconsciously affected the ratings of exhaustion levels. It is possible that men and women interpret the questions in the survey in different ways which could have led to differences in exhaustion levels. Research has shown that social expectations of gender and gender-typical tasks affect performance (Sharps, & Price, 1994). Expectations and norms concerning gender may not only affect performance, but also the experience of effort, demands, control and rewards. A greater imbalance between demand and control as well as effort and reward among women, could explain a higher psychological strain or exhaustion, as described in the demand-control-support theory and effort-reward model. To understand the specific mechanisms of how social expectations influence gender differences in exhaustion, further research is needed.

The results of Canivet et al.'s (2010) research highlight the differences in strain experienced by men and women. They found that women spent more time on household chores, had higher job strain and more often had a low socioeconomic status than men. The results indicate that women experience higher strain both in work and in other areas of life, which could explain the higher levels of exhaustion reported by women in the current thesis. Although a student population differs from the working population used in Canivet et al.'s study, as many as 37% lived with a partner, and 26% lived with friends or in a corridor, which makes it reasonable to think that similar gender inequalities in distribution of household chores may be present in a student population too.

Social support. Social support from friends is a significant predictor of exhaustion while social support from family and significant others are not significant. This is contradictory to the results of Olwage and Mostert (2014), who found that support from family was associated with less risk for burnout. Yildirim (2008), however, found that support from friends and colleges were significant predictors of burnout, but not social support from family and significant others, which is in accordance with the results of the current thesis. The sample consisted of university students, and it is possible that many of the students have moved away from their families to a new city, which could explain why social support from friends and significant others plays a more important role than family.

Despite the significant correlation between social support from family and exhaustion, support from family was not significant as a predictor in the regression analysis. Social

support from family was positively associated with self-esteem ($r=.45$), which is a possible explanation for why social support from family was not a significant predictor of exhaustion. The partial correlation between social support from family and exhaustion, controlling for self-esteem, yielded a non-significant low correlation ($r=-.04$). A possible explanation for that is that self-esteem affects both exhaustion levels and perceived support from family. Another option is that self-esteem mediates the relationship between social support from family and exhaustion, so that support from family affects exhaustion levels entirely via its effect on self-esteem. According to Karasek and Theorell (1990), social support enhances a positive self-identity, which supports the latter explanation of self-esteem as a mediator of social support from family and exhaustion.

Social support from significant others is neither significant in the correlational analysis nor in the regression analysis, however there are clear tendencies in both the analyses. One possible explanation for the insignificant results is that the concept “significant others” is more ambiguous than “friends” and “family”. Significant other could be interpreted as a partner, a very close friend or a sibling; however, as there already were questions regarding social support from friends and family, significant other might have been interpreted as a partner. Participants who did not have a partner might have had difficulties with answering that question, which could have affected the results.

Based on the results it is not possible to deduce whether or not there is a main effect or buffering effect of social support on exhaustion. According to the results of Mitchell et al. (2014) perceived social support acted as a stress buffer. The experienced availability of support affected the reappraisal of stress. According to Alarcon et al. (2011) social support enhances coping, which affects the perception of exhaustion. The perception of having social support from friends might lead to appraising stressful events differently, or to enhance coping strategies that reduce feelings of stress. In this study social support is associated with self-esteem ($r=.43$, $p<.0028$). It is possible that a high level of social support increases self-esteem, which results in lower levels of exhaustion, however due to the limitations of the cross-sectional design it is not possible to make any causal inferences.

In this study social support from friends has the highest predictive value when it comes to exhaustion, however, that might differ in another culture. Ekbäck et al. (2013) discuss the possible cultural differences when it comes to social support. Different aspects of social support may be valued differently in diverse cultures. Individualist and collectivist cultures may also differ in the perceived need for social support, because of different social

expectations and norms. This is a threat to the external validity as the generalizability of the results to other cultures is limited.

Physical activity. Physical activity is also a significant predictor of exhaustion. The one way ANOVA show that the group of participants who engaged in vigorous physical activity has significantly lower exhaustion rates than the participants who were sedentary or engaged in light to medium physical activity. There is no significant difference between the medium physical activity group and the sedentary to light physical activity group. The results suggest that physical activity could have an effect on exhaustion, only when engaging in vigorous physical activity (high intensity training several times a week). Another possibility is that students who are exhausted don't engage in vigorous physical activity as often as students with low exhaustion levels. The results differ from Jonsdottir et al's (2010) who found that there were differences in stress, burnout, depression and anxiety between those who were sedentary and the other three groups.

The number of participants who rated "sedentary" in the current sample is very low (N=11, 4%). The percentage is lower than in Sjørl et al. (2003), who reported that between 25-30% were sedentary. Because of the low N-number the sedentary group was combined with the low physical activity group. When looking at the descriptive statistics of the different physical activity groups, a tendency to a difference between the sedentary and the other groups is seen, however due to the low N-number it was not possible to find any reliable results. In a larger sample it might have been possible to detect differences in exhaustion levels between sedentary participants and the low-medium physical activity-participants.

Being in nature. Being in nature is not a significant predictor of exhaustion. The correlation with exhaustion is not significant either ($r=-.13$, $p=.039$), however there was a tendency. Previous research (Ewert et al., 2016; Nielsen & Hansen, 2007) has discussed the difficulty in separating physical activity and being in nature, due to the fact that people often engage in physical activity when outside. 62% of the participants in the present study reported that the primary reason for being in nature was to go for a walk or a run. Therefore there is a possible overlap between being in nature and physical activity. The correlation between being in nature and physical activity ($r=.22$, $p=.003$) was not significant after the Bonferroni correction, but there was a clear tendency which to some extent could explain why being in nature was not significant as a predictor.

The measurement of being in nature can also be criticized. There was no available scale measuring to what extent individuals spend time in nature, so questions were created for this study. Although they were pilot-tested the sample was small and no statistical analyses

were done on the pilot. One of the four questions was hard to use in the statistical analyses due to very similar responses. The author also got feedback through e-mail from two participants who found it hard to answer how many hours per week they spent in nature. Therefore the construct validity of the questions concerning being in nature can be questioned. Moreover, the questions may not have been specific enough and the questions may not cover the concept being in nature in a representative way. The question used in the analyses concerned how much time was spent in nature, but it is possible that other factors than time in nature are more important to capture the concept. It may be the quality of the time spent in nature or the way nature affects attention restoration as proposed by Kaplan (1995). Defining nature is also difficult. The current thesis included both non-man-made and man-made environments in the definition of nature. However, the effect of spending time in different types of natural environments may differ. It is possible that a more differentiated instrument would capture the concept of being in nature in a better way.

The associations found between exhaustion and natural environments in previous studies (Ewert et al., 2016; Maas et al., 2009; Sahlin et al., 2014; Ulrich et al., 1991) have not used self-reports, which is an explanation for the different results of the present study. Using a different measurement than self-reports might yield different results in a study of being in nature as a predictor of exhaustion, for example, measuring the size and proximity of green areas is a possibility.

Strengths and limitations

Studies regarding predictors of exhaustion among university students in Sweden are scarce, which makes the current study important. It contributes through expanding the knowledge about what factors are associated with exhaustion. Although the study is cross-sectional and no causal inferences can be made the results contribute to the understanding of exhaustion, which makes it possible for other researchers to develop the understanding for exhaustion through longitudinal studies. The study also contributes through partly corroborating results of previous research.

The fact that as many as 33% of the students have exhaustion scores above cutoff also suggests that exhaustion among students ought to be taken seriously and that prevention and good treatment should be prioritized.

Design and procedure. The study used a cross-sectional design, which makes it possible to find associations between factors, although one cannot make causal inferences. It is not possible to say in which direction the associations go. It is possible that the predictors are causes of higher exhaustion rates. However, it is also possible that the high levels of

exhaustion can affect people's self-esteem, the degree of physical activity and the degree of social support that they are able to perceive. To be able to investigate the direction of the association longitudinal designs are needed.

When it comes to the design of the survey no opportunity to write comments was included. The author got feedback through e-mail that an opportunity to write comments would be appropriate. All the questions of the survey were also made mandatory, which eliminated non-response analyses. All answers could be used, which is a strength. On the other hand, it is possible that participants started to fill in the survey, but stopped when difficult questions emerged, or when they found no suitable response alternatives. Therefore there is probably an unknown drop-out number, which is a threat to the internal validity.

A strength of using surveys to collect data is that it is an effective way of getting a large number of participants, which increases the power and statistical validity. A limitation with using survey for data collection is the risk of social desirability. However, using a web-survey protects the anonymity of the participants, which might lower the risk for social desirable answers. Using self-reports to measure a construct always increases the risk of participants interpreting the answers differently, which could affect the results. Therefore the internal validity is threatened, as alternative explanations of the results cannot be excluded. More than interpreting the questions differently, participants might experience difficulties with knowing what to answer. For example, reporting how many hours per week one spends in nature or how physically active one is, might be difficult to report reliably. Therefore, the construct validity is also threatened.

Moreover the sampling method can be criticized. To increase the external as well as the internal validity a random sampling would have been appropriate. However, because of the difficulties with using a random sampling a convenience sample was used, which limits the generalizability of the results. The survey was distributed through social media as well as e-mails to students of different educations. Some administrators were willing to send out information to students, while others were not. This resulted in an imbalance of participants from different faculties. The fact that social media was used to distribute the survey has also affected what participants were included in the sample as the social network of the author was limited and biased.

The survey was pilot tested, however the pilot was very small and no statistical analyses were done. A more elaborate pilot with statistical analyses could have improved the survey, since some questions concerning being nature were impossible to use because of a lack of variance in answers. This was not done because of the limited time.

Participants. The sample consisted of 253 participants which could be considered an appropriate sample size. Apart from yielding high power and increasing the statistical validity a high number of participants also lower the risk of type II errors. Owing to the high number of participants it was possible to make comparisons between subgroups, such as between the different physical activity groups. 73% of the participants were women, which is a higher percentage of women than at Lund University. In 2012-2013 54% of the students at Lund University were women (Statistiska Centralbyrån, [SCB], 2014). 83% of the participants studied at the Medicine or Social Science's Faculties, which could be an explanation for the high number of women. The biased sample threatens the internal validity as factors other than those intended to measure could have affected the results. The uneven distribution of men and women also threatens the external validity, because of the difference between the sample and the population. Including participants from Lund University only, also limits the generalizability of the results to other student populations, although it strengthens the internal validity, as confounding variables are limited. Admission to Lund University requires higher grades than admission to some other universities (Universitets- och högskolerådet, [UHR], 2017). It is possible that students at Lund University, in general, are high performers, which might be a distinguishing characteristic of the population. That could have affected the results of the study, and it limits the generalizability of the results. Despite the differences between students at Lund University and students at other universities, it is possible to some extent, to generalize the results to other student populations.

It is likely that some people are more prone to answer surveys than others. Perhaps individuals who are overcommitted, as described by Siegrist et al. (2014), have problems saying no and tend to answer surveys more often. It is also possible that those individuals are at greater risk of experiencing exhaustion, for the same reason. More women than men filled in the survey, which could be explained by a variety of factors. However, as women also had higher levels of exhaustion than men, there might be some common factor that make women more prone to filling out surveys more often, as well as experiencing higher levels of exhaustion. Therefore, the level of exhaustion found in the study might be higher than in the population. However, it is also possible that the individuals who suffer from very high levels of exhaustion were not able to fill in the survey at all, which could have affected the results in the opposite direction.

Instruments. KEDS, MSPSS and RSES show high reliability and the instruments have been widely used, which yields good construct validity. However, the responses on MSPSS were not normally distributed, which impaired the statistical analyses. There was a negatively skewed distribution with a ceiling effect, similar to the distribution found by

Ekbäck et al. (2013). The ceiling effect is a threat to statistical and internal validity, which is a limitation of the instrument. Social desirability might be an explanation for the uneven distribution.

SGPALS is an instrument that has been used in many previous studies. It was not possible to test the reliability of the instrument. It is an old instrument that has been modified through the years to improve the response alternatives. Although a well-tested instrument, SGPALS was not an optimal instrument for a regression analysis. The instrument consists of one question with four alternatives, and the answers were recoded into two alternatives in the regression analysis. A scale with more questions would have fitted the purpose better. Because of a lack of other available instruments SGPALS was used. Another limitation of SGPALS is that it was created for a sample of male athletes, which is a threat to the internal validity and the construct validity, as the sample consisted of a majority of women. It is possible that women and men exercise in different ways and that the examples of the physical activity levels of the scale to a greater extent apply to men. However, the alternatives have been modified through the years, which probably has led to an adaptation of the instrument to fit both men and women.

It was not possible to find any instrument measuring the extent to which one spends time in nature, so four questions were created. One of the questions was difficult to use in the analyses (Do you like spending time in nature?), and only one question was used in the regression analysis (“How often do you spend time in nature?”). To test the reliability of that question Spearman’s correlation was used to investigate the association with the question “How many hours per week do you spend in a nature?”. The correlation was $r=.65$ which indicates acceptable reliability of the questions. Although a decent r -value the construct validity would have increased by using a well-tested scale or other reliable measures of time spent in nature.

No convergent or divergent measures were used, because of an attempt to keep the survey short enough to get a large number of participants. However, it would have increased the reliability, construct and statistical validity to include several measures of the factors. For example a measure of stress levels or general mental health could have been used as a complement to KEDS.

When it comes to the demographic questions not all of them were used. One question concerning how many semesters the participants had studied was included in the survey. Because of a problem with the format of the answers, no analyses based on that question were done. This is a limitation as research by Rudman and Gustavsson (2012) showed that burnout

levels increased throughout the education. Possible differences between students in different periods of their educations might have been missed.

Practical implications and suggestions for further research

Practical implications of the results are that social life of students plays an important role, not only in enjoying life, but in possibly reducing levels of exhaustion. Students should therefore be encouraged to engage in social activities. Making physical activity available for students as well as working with increasing self-esteem is also a suggestion based on the results. The gender differences found in the study is an eye-opener to the inequality between men and women, which clarifies the need for a greater understanding of the relationship.

The results indicate that the factors self-esteem, social support from friends, physical activity and gender are important factors in understanding exhaustion among university students. The current study corroborates the results of previous research; however the group university students ought to be studied more in relation to exhaustion, to understand what are risk factors and protecting factors for exhaustion. Longitudinal studies are needed, to investigate the directions of the associations. To improve the reliability and validity the use of instruments could be adjusted to better fit a regression analysis. A scale concerning being in nature could be developed, and studies that use other types of measures are also welcome. It would also be more appropriate to use another type of instrument for measuring physical activity, for example, the International Physical Activity Questionnaire (Craig et al., 2013).

Another suggestion for further research is to study interaction effects to understand more of how the factors are associated with each other and with exhaustion. That would contribute to a more complex understanding of the mechanisms of how exhaustion is developed.

When it comes to the gender differences found in the study, it would be of interest to study what mechanisms cause the differences in exhaustion. Are the demands on women higher than on men? Are there other types of expectations from society on women? Do women in a student population take responsibility for household chores to a greater extent than men? It is also of importance to keep researching whether or not there are any gender differences in exhaustion levels. Although this study found significantly higher exhaustion levels among women the evidence of previous research is contradictory, which makes it important to continue investigating the topic.

Conclusion

The findings of the current study acknowledge that exhaustion is a major problem among university students, as one third of the participants in the study reported high levels of exhaustion. The results also show that self-esteem, gender, physical activity and social support from friends are significant predictors of exhaustion. Self-esteem is clearly the factor with the highest predictive value. Women have higher exhaustion levels than men, which both corroborates and contradicts previous findings. In total the factors explain 33% of the variance in exhaustion, which suggests that the factors investigated in the study play a significant role in the understanding of how exhaustion is developed or prevented. However, the results also indicate that exhaustion is complex and that there must be a variety of factors associated with exhaustion.

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Appendix



Hej!

Den här enkäten görs som del av en examensuppsats på Psykologprogrammet vid Lunds universitet. Syftet med studien är att undersöka sambanden mellan utmattning och socialt stöd, självkänsla, fysisk aktivitet, att vara i naturen och kön, bland studenter vid Lunds Universitet.

Enkäten tar 10-15 min att genomföra. Du som deltar ska studera heltid på Lunds Universitet (ej distansstudent).

Medverkan är helt frivillig och anonym och du kan när som helst avbryta din medverkan, utan att ange anledning. Resultaten kommer att presenteras på gruppnivå, och skulle du vara intresserad av att ta del av resultaten så kommer uppsatsen att finnas tillgänglig via Lunds universitet. Om du har några frågor är du välkommen att kontakta mig på mailadressen nedan.

Tack för din medverkan!

Rebecka Hektor

rebecka.hektor.435@student.lu.se

1. Jag har tagit del av ovanstående information och samtycker till att delta i studien.

- Ja
 Nej

Först kommer några frågor om vem du är!

2. Hur gammal är du?

- upp till 20
 21-25
 26-30
 31-35
 36-40
 över 40

3. Vilket kön har du?

- Kvinna
 Man
 Annat



4. På vilken fakultet studerar du?

- Ekonomihögskolan
- Juridiska fakulteten
- Samhällsvetenskapliga fakulteten
- Medicinska fakulteten
- Humanistiska och teologiska fakulteterna
- Konstnärliga fakulteten
- Lunds tekniska högskola
- Naturvetenskapliga fakulteten

5. Vilket program studerar du?

6. Vilken termin studerar du?

7. Hur bor du?

- Ensam
- Med partner
- Hos föräldrar
- I korridor / kollektiv

8. Jobbar du extra utöver studierna?

- Ja
- Nej



9. Följande påståenden handlar om hur du ser på dig själv. Det är inte ett test, och det finns inga svar som är rätt eller fel. Läs varje påstående noga och ringa in den siffra som stämmer bäst med hur väl varje påstående passar in på dig. Ringa bara in en siffra för varje påstående. Se till att du inte glömmor bort något påstående.

	Stämmer mycket dåligt	Stämmer inte	Stämmer	Stämmer mycket bra
På det hela taget är jag nöjd med mig själv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Då och då tycker jag att jag är rätt värdelös	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag känner att jag har en massa goda egenskaper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag klarar av saker och ting lika väl som de flesta andra människor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag känner att jag inte har särskilt mycket att vara stolt över	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ibland känner jag mig verkligen oduglig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag känner att jag är en värdefull person, åtminstone lika mycket värd som andra	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag önskar att jag kunde ha mer respekt för mig själv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
När allt kommer omkring känner jag mig nog rätt misslyckad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag har en positiv inställning till mig själv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Fysisk aktivitet och Motion Kryssa endast i EN ruta! Hur mycket rör Du Dig och anstränger Dig kroppsligt på fritiden? Om Din aktivitet varierar mycket mellan t ex sommar och vinter, så försök att ta ett genomsnitt. Frågan gäller det senaste året.

- Stillasittande fritid Du är nästan helt fysisk inaktiv: läser, ser på TV och film, använder dator eller har annan stillasittande sysselsättning på fritiden
- Någon fysisk aktivitet på fritiden under minst 4 timmar per vecka: Du cyklar eller promenerar exempelvis till arbetet, promenerar eller åker skidor med familjen, trädgårdsarbete, fiske, bordtennis, bowling etc
- Regelbunden måttlig fysisk aktivitet och träning under minst 2 till 3 timmar per vecka: Du ägnar Dig åt t ex tungt trädgårdsarbete, löpning, simning, motionsgymnastik, tennis, badminton eller liknande aktiviteter
- Regelbunden hård träning och tävlingsidrott (aktivitet med hög intensitet) Du ägnar Dig åt löpning, orientering, skidåkning, simning, fotboll, handboll etc. flera gånger i veckan



Avsikten med detta formulär är att ge en bild av ditt nuvarande tillstånd. Vi vill alltså att du försöker gradera hur du mått de senaste två veckorna. Formuläret innehåller en rad olika påståenden om hur man kan må i olika avseenden. Påståendena uttrycker olika grader av obehag, från frånvaro av obehag till maximalt uttalat obehag. Sätt ett kryss i rutan framför det svarsalternativ som du tycker bäst stämmer med hur du mått de senaste två veckorna.

11. Koncentrationsförmåga Här ber vi dig ta ställning till din förmåga att hålla tankarna samlade och koncentrera dig. Tänk igenom hur du fungerar vid olika sysslor som kräver olika grad av koncentrationsförmåga, t ex läsning av komplicerad text, lätt tidningstext och

- 0 Jag har inte svårt att koncentrera mig utan läser, tittar på TV och för samtal som vanligt.
- 1
- 2 Jag har ibland svårt att hålla tankarna samlade på sådant som normalt skulle fånga min uppmärksamhet.
- 3
- 4 Jag har ofta svårt att koncentrera mig.
- 5
- 6 Jag kan överhuvudtaget inte koncentrera mig på någonting.

12. Minne Här ber vi dig beskriva din förmåga att komma ihåg saker. Tänk efter om du har svårt att komma ihåg namn, datum eller vardagliga ärenden.

- 0 Jag kommer ihåg namn, datum och ärenden jag ska göra.
- 1
- 2 Det händer att jag glömmet bort sådant som inte är så viktigt men om jag skärper mig minns jag för det mesta.
- 3
- 4 Jag glömmet ofta bort möten eller namnen på personer som jag känner mycket väl.
- 5
- 6 Jag glömmet dagligen bort betydelsefulla saker eller saker som jag skulle gjort.

13. Kroppslig uttrötthet Frågan gäller hur du har det med din fysiska ork. Känner du dig t.ex. mer fysiskt trött än vanligt efter vardagliga sysslor eller någon form av

- 0 Jag känner mig som vanligt och utför fysiska aktiviteter som ingår i vardagen eller tränar som jag brukar.
- 1
- 2 Jag känner att fysiska ansträngningar är mer tröttande än normalt men rör mig ändå som vanligt i det avseendet.
- 3
- 4 Jag har svårt att orka med kroppsansträngning. Det fungerar så länge jag rör mig i normal takt men jag klarar inte att öka takten utan att bli darrig och andfädd.
- 5
- 6 Jag känner mig mycket svag och orkar inte ens att röra mig kortare sträckor.



14. Uthållighet Här vill vi att du tänker efter hur din uthållighet är och om du blir lättare psykiskt trött än vanligt i olika vardagliga situationer.

- 0 Jag har lika mycket energi som vanligt. Jag har inga särskilda svårigheter att genomföra mina vardagliga sysslor.
- 1
- 2 Jag klarar av att genomföra vardagliga sysslor men det går åt mer energi och jag blir fortare trött än vanligt. Jag behöver ta pauser oftare än vanligt.
- 3
- 4 Jag blir onormalt trött av att försöka utföra mina vardagssysslor och umgänge med andra människor tröttar ut mig.
- 5
- 6 Jag orkar inte göra någonting.

15. Återhämtning Här ber vi dig beskriva hur väl och hur snabbt du återhämtar dig psykiskt och fysiskt när du har blivit uttröttad.

- 0 Jag behöver inte vila under dagen.
- 1
- 2 Jag blir trött under dagen men det räcker med en liten paus för att jag ska återhämta mig.
- 3
- 4 Jag blir trött under dagen och behöver långa pauser för att bli piggare.
- 5
- 6 Det spelar ingen roll hur mycket jag vilar, det är som om jag inte kan ladda om mina batterier.

16. Sömn Här ber vi dig beskriva hur du sover. Tänk efter hur god sömnen varit och/eller om du känt dig utsövd under de senaste två veckorna. Bedömningen skall avse hur du faktiskt sovit, oavsett om du tagit sömnmedel eller ej.

- 0 Jag sover gott och tillräckligt länge för mina behov och känner mig för det mesta utvilad när jag vaknar.
- 1
- 2 Ibland sover jag oroligare eller vaknar under natten och har svårt att somna om. Det händer att jag inte känner mig utsövd efter en natts sömn.
- 3
- 4 Jag sover ofta oroligt eller vaknar under natten och har svårt att somna om. Det händer ofta att jag inte känner mig utsövd efter en natts sömn.
- 5
- 6 Jag sover oroligt eller vaknar varje natt och har svårigheter att somna om. Jag känner mig aldrig utvilad eller utsövd när jag vaknar.



17. Överkänslighet för sinnesintryck Frågan gäller om du tycker att något eller några av dina sinnen blivit mer känsliga för intryck. T.ex. ljud, ljus, dofter eller beröring.

- 0 Jag tycker inte att mina sinnen är känsligare än vanligt.
- 1
- 2 Det händer att ljud, ljus eller andra sinnesintryck känns obehagliga.
- 3
- 4 Jag upplever ofta ljud, ljus eller andra sinnesintryck som störande eller obehagliga.
- 5
- 6 Ljud, ljus eller andra sinnesintryck stör mig så mycket att jag drar mig undan för att mina sinnen ska få vila

18. Upplevelsen av krav Här ber vi dig ta ställning till hur du reagerar på krav som du upplever ställs på dig i vardagen. Kraven kan komma från omgivningen eller dig själv.

- 0 Jag gör det jag ska eller vill göra utan att uppleva det som särskilt krävande eller besvärligt.
- 1
- 2 Vardagliga situationer som jag tidigare hanterat utan särskilda problem kan ibland kännas krävande och orsaka obehag eller få mig att bli lättare stressad än vanligt.
- 3
- 4 Situationer som jag tidigare hanterat utan problem känns nu ofta krävande och orsakar ett starkt obehag eller en stark stress
- 5
- 6 Det mesta känns krävande och jag klarar inte av att hantera det överhuvudtaget.

19. Irritation och ilska Frågan gäller hur lättirriterad eller arg du känner dig inombords oavsett om du visat något utåt eller ej. Tänk särskilt efter hur lättväckt din irritation varit ("kort stubin"), i förhållande till vad som utlöste den, och på hur ofta och hur intensivt du känt dig arg eller irriterad. Om du överhuvudtaget inte kan känna några sådana känslor, skall du sätta din markering vid 0.

- 0 Jag känner mig inte särskilt lättirriterad.
- 1
- 2 Jag känner mig mer otålig eller lättirriterad än vanligt men det går också snabbt över.
- 3
- 4 Jag blir lättare arg eller provocerad än vanligt. Ibland förlorar jag fattningen på ett sätt som inte är normalt för mig.
- 5
- 6 Jag känner mig ofta alldeles rasande invärtes och måste anstränga mig till det yttersta för att behärska mig.

Att vara i naturen

Att vara i naturen kan till exempel vara att vara i en park, skogen, på landet, vid havet, i en trädgård.



20. Hur ofta är du ute i naturen? (Om det varierar mycket, försök att göra ett genomsnitt från det senaste året)

- Aldrig eller mycket sällan.
- Någon gång i månaden.
- Någon gång i veckan.
- Varje dag eller nästan varje dag

21. Hur många timmar per vecka brukar du ute i naturen? (Om det varierar mycket, försök att göra ett genomsnitt från det senaste året)

22. Vad är det främsta syftet när du är i naturen?

- Ta mig någonstans
- Promenera eller springa
- Friluftaktiviteter
- Vila
- Arbete

23. Tycker du om att vara i naturen?

- Ja
- Nej

Frågor om dina sociala kontakter

Nedan följer 12 påståenden som handlar om Dina sociala relationer till betydelsefulla personer, vänner och familj. Läs varje påstående, ta Dig tid att tänka över vad varje påstående handlar om. Använd följande skala för att välja den siffra som bäst stämmer in på Dig för varje påstående nedan: 1 = Instämmer inte alls 2 = Instämmer i mycket låg grad 3 = Instämmer i låg grad 4 = Instämmer delvis 5 = Instämmer i hög grad 6 = Instämmer i mycket hög grad 7 = Instämmer helt

24.

	1 Instäm- mer inte alls	2 Instäm- mer i mycket låg grad	3 Instäm- mer i låg grad	4 Instäm- mer delvis	5 Instäm- mer i hög grad	6 Instäm- mer i mycket hög grad	7 Instäm- mer helt
a. Det finns en för mig betydelsefull person i min närhet när jag behöver det	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Det finns en för mig betydelsefull person i min närhet med vilken jag kan dela glädje och sorg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Min familj försöker verkligen att hjälpa mig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Jag får den känslomässiga hjälp och det stöd av min familj som jag behöver	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Det finns en för mig betydelsefull person som verkligen bidrar till mitt välmående	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Mina vänner försöker verkligen att hjälpa mig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Om något går fel kan jag räkna med hjälp från mina vänner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Jag kan prata om mina problem med min familj	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Jag har vänner med vilka jag kan dela glädje och sorg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Det finns en för mig betydelsefull person i min närhet som bryr sig om mina känslor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Min familj är villig att hjälpa mig i mina beslut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Jag kan prata om mina problem med mina vänner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>