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Avdeling for folkehelse

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Masteroppgave

Working out in the workplace and subjective well-being: a survey of employees in a Norwegian company

**Trening på arbeidsplass og subjektiv velvære:
en undersøkelse av ansatte i et norsk selskap**

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Norsk sammendrag

Bakgrunn: Fysisk aktivitet og trivsel i hverdagen er viktige temaer i Norge for tiden. Mer nylig har oppmerksomheten blitt gitt til sammenhengen mellom fysisk aktivitet og bedre mental helse. Parallelt med dette har vært argumenter for å bruke arenaer, som for eksempel arbeidsplassen, for å implementere strategier for å skape sunnere arbeidsplasser. Men forskning på temaet fysisk aktivitet på arbeidsplassen og psykisk helse blant de ansatte har ikke blitt grundig studert, spesielt i Norge.

Hensikt og problemstilling: Denne forskningen ønsket å svare på tre spørsmål: hvem er med i den fysiske treningen på arbeidsplassen, hva er nivåene av subjektiv velvære blant ansatte og hva sammenhengen mellom fysisk aktivitet og subjektivt velvære er.

Metode: I dette kvantitative forskningsprosjektet ble det brukt tverrsnittundersøkelse med et selv-laget spørreskjema og Warwick-Edinburgh Mental well-being scale (WEMWBS) som verktøy. Spørreundersøkelsen ble laget og distribuert med Questback. Spørreundersøkelsen ble gjennomført i mai/juni i 2014 i ett selskap lokalisert i Oslo, Norge..

Resultat: Totalt, 49 ansatte svarte på undersøkelsen, en svarprosent på 9%. Av disse 49, var 29 menn og 20 kvinner. Nesten halvparten av disse var i aldersgruppen 41-50 år og hadde en bachelorgrad eller høyere, og 28 av de 49 respondentene (57%) utførte fysisk trening på arbeidsplassen. Hovedårsaken til den fysiske treningen på arbeidsplassen var at det var tilgjengelig og gratis. Subjektiv velvære av de ansatte var svært lik uavhengig av å delta i den fysiske treningen på arbeidsplassen eller hjemme. Den gjennomsnittlige poengsummen for WEMWBS totalt var 54,3 (SD = 7,1).

Konklusjon: Disse resultatene viser at menn og kvinner i aldersgruppen 40-51 var representert mest i utvalget og i deltakelse på arbeidsplassens treningsprogram, og den subjektive velvære synes ikke å ha et forhold til arbeidsplassens treningsprogram. De fleste av deltakerne hadde høyere utdanning. Men både alder og utdanningsnivå kan være en skjevhet i utvalget. På grunn av den lave svarprosenten, er utvalget ikke statistisk representativt og kan ikke generaliseres til befolkningen for øvrig.

Nøkkelord: Fysisk trening, WEMWBS, subjektiv velvære, trening på arbeidsplass

English Abstract

Background: Physical activity and well-being in everyday life are major themes in Norway currently. More recently, attention has been given to the link between physical activity and better mental health. Alongside this have been arguments for using settings, such as the workplace, for implementing strategies to create healthier workplaces. However, research on the topic of workplace physical activity and mental health among employees has not been extensively studied, particularly in Norway.

Aim and objectives: This research wanted to answer three questions: who participates in workplace physical activity, what are the levels of subjective well-being among employees and what the relationship between physical activity and subjective well-being is.

Method: This quantitative research used a cross-sectional study design with a self-completion questionnaire and the Warwick-Edinburgh Mental well-being scale (WEMWBS) as a tool. The survey was created and distributed with Questback. The survey was conducted in May / June 2014 in one company located in Oslo, Norway.

Result: Overall, 49 employees responded to the survey, a response rate of 9%. Of these 49, 29 were men and 20 were women. Almost half of these were in the age group 41-50 years and had a bachelor's degree or higher, and 28 of the 49 respondents (57%) performed physical exercise in the workplace. The main reason for the participation in the workplace workout was that it was available and free. Subjective well-being of the employees was very similar regardless of participating in workplace workout or at home. The WEMWBS mean score overall was 54.3 (SD=7.1).

Conclusion: These results show that men and women in the age group 40-51 was represented the most in the sample and in participation of the workplace workout program, and the subjective well-being does not seem to have a relationship with the workplace workout program. Most of the participants had higher education. But both age and level of education may be bias in the sample. Because of the low response rate, the sample is not statistically representative and cannot be generalized to the wider population.

Keywords: Physical workout, WEMWBS, subjective well-being, workplace workout

Content

1. Introduction	9
1.1 Background: workplace health promotion and subjective well-being	9
1.2 Introduction to the role of the workplace	9
1.3 Subjective well-being	11
1.4 Research question	12
2. Review of the literature	13
2.1 Promoting health in the workplace: a critical review of research	13
2.2 Settings-based health promotion	13
2.3 Work-based health promotion schemes focused on physical activity	14
2.4 Mental health in the workplace	16
2.5 The lack of evidence	16
2.6 Searching for literature and key words	16
3. Methodology	17
3.1 Research strategy	17
3.2 Study design	17
3.3 Development of the questionnaire	19
3.4 Preliminary work	22
3.5 Survey process	24
3.6 Workplace setting	25
3.7 Data analysis and variables	26
3.8 Ethical considerations (NSD)	28
4. Results	29
4.1 Introduction	29
4.2 Description of the respondents	29
4.3 Who participated in physical activity	30
4.4 Subjective well-being in the workplace	34

5. Discussion	37
5.1 Limitations of the study.....	37
5.2 Discussion of the results	39
5.3 Public health policy and future research.....	40
5.4 Conclusion.....	41
References	42
Appendix 1: Information sheet and questionnaire in Norwegian.....	47
Appendix 2: Approval for the use of WEMWBS 14 item scale.....	53
Appendix 3: Confirmation from NSD	55
Appendix 4: The Warwick-Edinburgh Mental well-being Scale.....	57

Tables

Table 1 Example: Scoring of WEMWBS 27

Table 2: Age profile of respondents 29

Table 3: Level of education of respondents. 30

Table 4: Workout in leisure..... 30

Table 5: WEMWBS mean scores across groups..... 35

Figures

Figure 1: Who participated in physical activity in the workplace.....	31
Figure 2: Reasons for workplace workout	32
Figure 3: Reasons for not participating in workplace workout.....	33
Figure 4: Reasons for what is needed to participate in the workplace workout.....	33
Figure 5: Distribution of WEMWBS scores for the 49 respondents.....	34

1. Introduction

1.1 Background: workplace health promotion and subjective well-being

This chapter gives an explanation of the background for workplace health promotion and subjective well-being. It discussed the role of the workplace and how it may contribute to health promotion and what has been done about it. Then the chapter ends with revealing the research questions that will be explored later in the chapters.

The Ottawa Charter states that “Health is created and lived by people within the settings of their everyday life; where they learn, work, play and love” (WHO, 2013c). This drew attention to the ways different settings could influence health, for example the workplace, as it is a setting that reaches a large population. The setting for this research is a company that has established the principle that every employee has the opportunity to participate in physical activity during work hours. This research will explore the uptake of physical activity opportunities in the workplace and the relationship with employee well-being. A quantitative research strategy based on a cross-sectional survey design will be used to explore the research question.

Health promotion in the workplace is a relatively new concept in Europe (Chu et al., 2000). In 1986 the World Health Organization set a goal to make workplaces a better health promoting arena (Chu et al., 2000). Before this workplace health promotion was seen as a way to ensure the safety of the employees, that they did not come to any harm (Chenoweth, 2011). After a while there was a shift in thinking among some policy makers, that they could expand the concept so it moved beyond protection and the prevention of harm to the active promotion of health and well-being (Chenoweth, 2011).

1.2 Introduction to the role of the workplace

There are many determinants of health. A social system such as a workplace can make a contribution to promoting the health of its employees (Dooris & Hunter, 2007). One of the ways this can be done is through the delivery of messages to people that can strengthen or weaken the messages of health promotion (Dooris & Hunter, 2007). The way this research is viewing the workplace as a social system is that the setting can create or undermine health. For example placing a gym at the workplace can make the workplace more health enhancing for employees. But also is the importance of management allowing employees’ time in the

working day to use it. This can create autonomy to choose when and how they will spend their time (Weinberg & Gould, 2007).

Pressure/stress once in a while is common at workplaces, and this can be positive by improving performance or giving job satisfaction to the employees (Teasdale, 2006). However, it has been estimated that about 50-60 % of all the lost days at work can be linked to stress (European Agency for Safety and Health at Work, 2015). The downside of pressure/stress is if it reaches a level, for a sustained period of time, it can lead to physical and mental health problems (Teasdale, 2006). The purpose of the Working Environment Act for Norway is to ensure a work environment that builds a foundation for a health promoting and meaningful work, which also provide protection against physical and mental harm, and contributes to an inclusive workplace (Arbeidsmiljøloven, 2005). Therefore one role of the workplace in Norway is to ensure a work environment that promotes health.

A number of benefits of workplace health promotion initiatives have been identified. The World Health Organization argues that employees should have a safe and healthy environment, which can enhance self-esteem, reduce stress, and improve health and well-being (WHO, 2013h). The organization can also benefit from it. Workplace health promotion initiatives can contribute towards generating a positive and caring image, improve staff morale and reduce staff turnover, as well as increased productivity and reduced health care costs (WHO, 2013h).

Workplace schemes that focus on physical activity have been established over the last few decades in a number of countries (Verweij, Coffeng, Van Mechelen, & Proper, 2010). Some of these schemes aim to reduce cardiovascular risk factors, including reducing overweight and obesity, which may also contribute to reducing future healthcare costs (Conn, Hafdahl, Cooper, Brown, & Lusk, 2009). Workplace physical activity schemes vary in scope from providing employees free or reduced membership for the fitness-centre (Conn et al., 2009), to implementing a structured intervention where the employees, for example, get up and walk in the lunchtime (Thogersen-Ntoumani, Loughren, Duda, Fox, & Kinnafick, 2010).

In some countries, there has been an increasing awareness of the potential for workplace health promotion schemes to focus not only on the physical health of employees but also on their mental health. Workplace physical activity schemes have also been viewed as potentially having a role in this regard. However, to date there has been little if any research that has

studied workplace physical activity and mental well-being in Norway. In some of the research that has been found outside of Norway a relationship between workplace physical activity and well-being has been shown (Puig-Ribera et al., 2015). The aim of this Masters study is to explore the use of a workplace physical activity initiative and its relationship with subjective well-being in a specific company in Norway. Since 2009 the company has distributed several information sheets about mental health, well-being, physical activity and nutrition and provided access to a gym during work hours for all employees (personal communication, 9. September 2013).

Studies have shown that people who are employed have a better chance of having better health than unemployed people (Schuring, Burdorf, Voorham, der Weduwe, & Mackenbach, 2009). However, there has been considerable discussion about work stress in different professions over the last two decades, some professions more than others (Kam-weng, Kwok-bun, Yiu-chung, Lee-gan, & Geok-choo, 2007). Stress at work has been identified as an important factor in explaining social class differences in health (Dooris & Hunter, 2007). Making healthier workplaces can result in more contented and more productive employees (Dooris & Hunter, 2007). In Norway with a population of a little over 5 million, the unemployment rate is 4.1% (SSB, 2013). Since this rate is so low, by making the workplace a health promoting arena, as the World Health Organization suggests (WHO, 2013d), there is the potential to reach a large working population. There is the potential to contribute to preventing illness and disease as well as contribute to narrowing inequalities in health through a universal work-based initiative. Incapacity benefits are considerable, and the cost of sick leave is high (Dooris & Hunter, 2007), about 13 000 NOK in the week for every individual (Tønseth, 2013). This is one of the hard economically- grounded calls to all employers to take their health and the health of their employees seriously (Dooris & Hunter, 2007). Having little control over your own work is a particular risk for low back pain, cardiovascular disease and sick leave. Work demands generally are a large risk factor for decreased health (Dooris & Hunter, 2007).

1.3 Subjective well-being

This research focuses on subjective well-being. There is some consensus that this refers to people's own cognitive and affective evaluations of their lives (Diener, 2000). Every individual is granted the right to think for themselves if they are living a good life or not. This approach to defining what the good life is is called subjective well-being. This is also

sometimes referred to as “happiness” (Diener, 2000). People seems to have high subjective well-being when they have many good and few bad emotions (Diener, 2000). People make judgments about their lives as a whole, as well on their work (Diener, 2000). This study will explore the relationship between physical activity in the workplace and employee subjective well-being. This study is using the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) to measure subjective well-being.

1.4 Research question

The relationships between physical activity in the workplace and subjective well-being will be explored through the following research questions:

- Who participates in the workplace physical activity scheme?
- What is the relationship between participation in the workplace physical activity initiative and subjective well-being? What are the levels of subjective well-being among employees?

2. Review of the literature

2.1 Promoting health in the workplace: a critical review of research

In 1945 there was a meeting between diplomats to form the United Nations, one thing they discussed was to set up an organization that focused on global health (WHO, 2013e). On 7 April 1948 the WHO's constitution came into place. The date is now celebrated as World Health Day (WHO, 2013e). WHO describes itself as “the directing and coordinating authority for health within the United Nations system” (WHO, 2013a). It is responsible for giving leadership on health matters globally (WHO, 2013a). An example of the ways in which the WHO works in a leadership role is; in 1986 the first International Conference on Health Promotion was held in Ottawa (WHO, 2013f). The aim of this conference was to begin a public health movement around the world. The conference produced a ‘charter for action’ to achieve health for all by the year of 2000. This charter is called The Ottawa Charter for Health Promotion (WHO, 2013f). The Ottawa Charter states that health care is a small part of health promotion (WHO, 2013b). WHO believe that work and leisure time should be a source of health for every human, and this can be done by creating supportive settings (WHO, 2013b).

2.2 Settings-based health promotion

A setting is a place or a social context where people spend time in daily activities and where changes to health and well-being can take place through environmental, organizational and personal factors (WHO, 1998). Kokko, Kannas and Villberg state that “Settings-based health promotion is based on the idea that changes in people's health and health behaviour are easier to achieve if health promoters focus on settings instead of individuals” (Kokko, Kannas, & Villberg, 2006, p. 220). So if a setting is changed, the people's health and health behaviour is more likely to change with it (Kokko et al., 2006).

The WHO had the idea of health promoting settings back in 1986 (WHO, 2013c), and after that the idea is implemented in homes, workplaces, schools, markets villages and cities (WHO, 2013g). Organisations, schools and workplaces are a neglected area for public health, but an important one, since people spend so much time at these places (Dooris & Hunter, 2007). Workplaces have an opportunity to communicate the health messages and interventions to a specific group of people (Dooris & Hunter, 2007). The concept is relatively

new, and has been through a developmental process since the 1970s (Chu et al., 2000). Workplaces are one of the settings that has accelerated the most in improving health over the years (Whitehead, 2006). The reason that workplaces are important as a setting for health promotion is the impact the workplace has on the individual families, communities and society (Whitehead, 2006). By implementing health promotion in workplaces, it can spread into other settings (Whitehead, 2006).

A issue with a workplace health promotion is that it may not reach the most relevant groups (Jørgensen, Villadsen, Burr, Mortensen, & Holtermann, 2013). People with health challenges such as smoking, physical in-activity and reduced self-rated health are less likely to participate in a workplace health promotion program (Jørgensen et al., 2013).

There are a number of different workplace health promotion programmes in the world. Some of them focus on nutrition, stress management, confidence building, consumer health, spiritually, financial wellness or exercise (Chenoweth, 2011). The thing to remember is that a settings-based health promotion may work in one setting, but have a different effect in another setting (Dooris et al., 2007). This study will focus on an exercise programme that is already implemented in a company in Norway.

Many workplaces do not pay high attention to health, and therefore the setting-based health promotion strategy may still have a long way to go (Thurston, 2014).

2.3 Work-based health promotion schemes focused on physical activity

Physical activity in the western world is decreasing, and the increasing number of obese people is a visual consequence (Lerdal & Celius, 2011). Physical activity done regularly has a key role in public health (Lerdal & Celius, 2011). Related to this study, physical activity can help with depression, anxiety, distress, well-being, sleep-problems, low fatigue, self-esteem and cognitive function (Dishman & Chambliss, 2010). In the ages from 20-64 years old about 1/3 of the women and 1/4 of the men in Norway meets the minimum recommendation for physical activity to the Directorate of health in Norway (Helsedirektoratet, 2015). Some of the reasons for having a work-based health promotion scheme that focuses on physical activity are the growing evidence that doing exercise can reduce some of the risk of heart disease, stroke, obesity and cancer (Chenoweth, 2011). The evidence also show that the job-productivity also increases with the help of regular physical activity (Chenoweth, 2011). A meta-analysis of workplace physical activity interventions from USA states that some

workplace physical activity interventions may enhance health and even important worksite outcomes (Conn et al., 2009).

A study that reviewed the workplace physical activity program effects states that there is a lot of evidence for a positive effect on physical activity and musculoskeletal disorder (Proper et al., 2003). The evidence was limited on fatigue, cardiorespiratory fitness, muscle strength, body weight and general health (Proper et al., 2003).

The Booster Break programme from the USA was a small programme that included a 15 minute's work-break intervention over six months. The intervention included a warm-up, toning, cool down and relaxation, and the participants were 8 women and 6 men from the age of 32 to 66. The study showed an increase in physical activity and a decrease in sitting time, both in weekdays and weekends, however it was not a significant difference (Taylor et al., 2010).

In an article about who participates in physical activity interventions in different settings there were found that the majority were Caucasian and about 75% were women (Waters, Galichet, Owen, & Eakin, 2011). In the same study they could report that in the workplace setting the numbers were similar, 63.4% were women (Waters et al., 2011). Most of the participants also had postsecondary education, had over average income and were middle-aged (Waters et al., 2011).

In Norway there was a study on the effectiveness of a pragmatic worksite physical activity program to see the maximal oxygen consumption and how well the physical activity level was in healthy people (Østerås & Hammer, 2006). The sample of the study was 80 men and 51 women, and the conclusion was the individual pragmatic worksite program can help to increase the physical activity level for relatively inactive workers (Østerås & Hammer, 2006).

There are many companies that provide their employees a workplace physical activity program on the company ground, but the usage rates is not high (Schwetschenau, O'Brien, Cunningham, & Jex, 2008). Some barriers for joining and using a company gym can be that the facilities are inadequate or that the employees feel it is embarrassing to work out around colleagues (Schwetschenau et al., 2008).

2.4 Mental health in the workplace

The UK have around a half million people that experience work-related stress so intense that they believe it is making them sick, and it costs the society several billions each year (Sheena et al., 2005). Therefore thinking about strategies to support mental health in the workplace could be beneficial (Cooper & Cartwright, 1994). The introduction chapter talked about what subjective well-being is, and that the study was going to use the WEMWBS. The scale measures mental well-being, and not the causes of mental well-being (Stewart-Brown & Janmohamed, 2008).

2.5 The lack of evidence

The evidences in the articles are slim between the relationship of physical activity in the workplace and subjective well-being. However, research suggests that physical activity is related to improved mental health in adults (Parker, Strath, & Swartz, 2008). A cross-sectional study from the USA reports that 2.5 to 7.5 hours of weekly physical activity is the optimal threshold volume to increase mental health (Kim et al., 2012). Another study states that physical activity can enhance people's subjective well-being and that physical activity intervention has more to offer than just physical health benefits (Rejeski et al., 2001).

A meta-analysis from the USA shows that some of the workplace physical activity interventions can reduce the risk of diabetes and that they are needed since most of the adults do not perform enough physical activity to enhance health and well-being (Conn et al., 2009). By offering workplaces successful health promotion schemes, workplaces may enhance employee well-being through the schemes (Sparks, Faragher, & Cooper, 2001).

There has not been found any articles from Norway that include a physical activity program in a workplace and what the relationship is between the participation of a program like this and subjective well-being.

2.6 Searching for literature and key words

The search databases that has been used for this research is mostly the "Oria" and "Google scholar". The key search words are; physical activity, health promotion, worksite, subjective well-being, WEMWBS and scheme. These words are used in many different combinations during the search for literature. Also used curriculum literature and other appropriate books, as well as being inspired by other thesis written by students.

3. Methodology

3.1 Research strategy

First part of this chapter reveals what type of research strategy and study design has been used in this research. And will further describe how the process of the research went from start to finish.

The research question(s) is concerned with first describing participation of employees in physical activity at their workplace, and second to investigate subjective well-being and physical activity. This requires a quantitative strategy (Bryman, 2012).

Some would say that the difference between quantitative and qualitative research is numbers vs. words. However, it is more complex than that (Bryman, 2012). Bryman describes quantitative research as “entailing the collection of numerical data, as exhibiting a view of the relationship between theory and research as deductive” (Bryman, 2012, p. 160).

3.1.1 Measurement validity and reliability

Strong validity is important to have in quantitative research. Validity says something about how strong possibility the measurement reflects the research questions (Bryman, 2012). This study has carefully written the questionnaire and used the WEMWB scale, which is a strong validated well-being scale in English language population (Malcolm, Evans-Lacko, Little, Henderson, & Thornicroft, 2013). The researcher reviewed questions on physical activity and sociodemographic information from existing questionnaires and then developed the questions informed by this.

High reliability is when a repeated measurement will give the same result (Bryman, 2012).

The WEMWBS has good reliability and the scores remains strong over a short time (Stewart-Brown & Janmohamed, 2008).

3.2 Study design

A study design, also known as a research design can be seen as a framework for the researcher when it comes to the collection and analysis of data (Bryman, 2012). One of the key elements of a study design is that you can generalize your study to larger groups of individuals and express some of the casual context between variables, like sex, age, education

level, as this research did (Bryman, 2012). This research wanted to find out what type of sex uses the program most, what age group and what education level. And see if the outcomes on each variable are different.

With the time that was available and the time the company would be willing to spend, as well as the resources available, a cross-sectional design was used, which is one of the most common designs used in quantitative research (Bryman, 2012).

A cross-sectional design gives a 'snapshot' at one point in time (Bryman, 2012). A 'before and after'-study would be more appropriate if the individuals were not already participating in physical activity in the workplace, but the company had implemented the opportunity in 2009. There is no before and after testing in a cross-sectional design. When the individual has completed with the questionnaire, the responses are given at one point in time (Bryman, 2012). A cross-sectional study typically includes several cases (Bryman, 2012). With this design researchers are interested in variation, for example age, sex, level of education etc. This can only be secured if more than one case is examined (Bryman, 2012). This study examined the variables to detect differences in sub-groups within the sample. This helped the research to find out if there is a relationship between physical activity in the workplace and subjective well-being (Bryman, 2012).

Cross-sectional studies are often quick and cheap to conduct (Magnus & Bakketeig, 2003), which is appropriate for a Masters dissertation. A problem with cross-sectional designs is that it is difficult to say that X leads to Y, when it can just as easily be that Y leads to X (Jacobsen, 2010). So it is almost impossible to say what the cause and effect is, since the study does not know the order in time.

3.2.1 *Self-completion questionnaire*

A cross-sectional survey using a questionnaire was used to operationalize the study's research questions. A self-completion questionnaire was used in this study. The data that comes out of the questionnaire will be used to measure physical activity and well-being, as well as relevant sociodemographic information like social class, age, sex, educational level etc.

3.3 Development of the questionnaire

3.3.1 Possible issues with a questionnaire web-survey

Instead of traveling to the subjects to give them the questionnaires by hand, a web-survey was used. This was not only a cheaper method of distributing the questionnaire but also more efficient (no cost of the travel, and the time of the researcher could be better spent) (Bryman, 2012). This study used a web-survey named Questback. It is less time-consuming for both parties to inform of a web-survey, get them answered, and collect the data, instead of doing personal interviews with the same size sample (Bryman, 2012). It is better for the subjects' because they can use as much time as they want, and decide when they want to complete the questionnaire (Bryman, 2012). The manager at the company who helped in facilitating the research allowed the participants to complete the questionnaire in the work hours if they wanted to. With a self-completion questionnaire the researcher does not have to be present while the subjects are completing the questionnaire. This is a good thing, because the interviewer may influence some of the answers (Bryman, 2012). This also has to do with the ethical issue of invasion of privacy, and that the participants answers truthfully (Bryman, 2012). It can also be a negative thing that the researcher is not there. If the subjects have difficulty answering a question, no-one is there to help them. Therefore clear and easily understandable questions and instructions were written into the questionnaire (Bryman, 2012).

An interviewer can ask questions in a different order, or in a different way, which may cause problems. This does not happen with self-completion questionnaires (Bryman, 2012). These questions should be well formulated and standardized (Dalland, 2007). A researcher cannot ask subjects of what they meant by an answer. But this is particularly in open questions in self-completion questionnaires (Bryman, 2012). This study had four open questions that was later categorised and used in the result-chapter.

Since a subjects fatigue can influence answers, it should not be too many questions in the questionnaire, neither should it be too boring, for the same reason (Bryman, 2012). The questionnaire was tested before it was sent to the participants. This was to check how long it would take to answer it and if the questions were understandable.

A problem with a web-survey is that you can never be 100% sure that the subjects that were going to do the questionnaire actually did it, or if they let someone else do it (Bryman, 2012).

To minimize the risk of this happening, the information sheet had stated how important this study was, and that it should be answered truthfully.

The last, but not least negative error in self-completion questionnaires is the great risk of losing data, or getting low response rates (Bryman, 2012). To get good response rates it was important to have good and interesting questions, not too long questionnaire, clear instructions and good order in the questions and themes (Bryman, 2012). To make sure of this, a pre-test and a pilot-study was performed before the actual study. This will be explained more in detail later in the chapter.

In this study, the manager for the physical activity programme at the company had informed the employees about questionnaire. This was done over an internal website only the employees have access to. It was important that every employee knew about the questionnaire, and that everyone had the opportunity to answer it. The manager also informed that this was a voluntary survey, and that the employees had to make their own decision about whether or not to answer the questionnaire. This was also stated on the front page of the questionnaire.

3.3.2 *Measurements*

Bryman (2012) says that if a concept is to be used in quantitative research, it has to be measured. There are mainly three reasons to measurements are important to quantitative research. Number one is that measurements help us to see a small difference in what characterizes people. Number two is that measurement gives the researcher a tool for making those small differences. And number three is that measurements provide the researcher to see the degree of relationship between concepts more precise. In this research the sociodemographic information, physical activity and subjective well-being was measured.

3.3.3 *Sociodemographic information*

Sociodemographic data was collected for three purposes; (i) to describe the sample of respondents, (ii) to find out who participated in the workplace physical activity programme, and (iii) to investigate subjective well-being in relation to different subgroups. The sociodemographic data was sex, age, education level and if Norwegian was the native language.

3.3.4 *Physical activity*

Physical activity is defined as “any bodily movement produced by skeletal muscles that results in energy expenditure” (Dishman, O'Connor, Tomporowski, & Buckworth, 2013). However, in this research, the concept physical activity is narrower than this definition. Physical activity in this research was more in the line of; physical activity done regularly over time in the workplace gym to enhance physical form or health. So a walk to the printer and back did not go in the category as physical activity in this research. This study asked the participants’ the following questions about physical activity:

Do you exercise in leisure time?

Do you exercise at the workplace?

- If yes, how many times a week? How long time do you usually exercise? Are you required physical training because of the work demands? What kind of exercise do you do at the workplace? Why do you exercise at the workplace? Is the social aspect related to training important to you? Do you exercise with colleagues?
- If no, do you know that you have the opportunity to exercise at the workplace? Why do you not exercise at the workplace? What is needed for you to start exercising at the workplace?

These questions were used to investigate the relationship between physical activity and subjective well-being when within the groups created by the sociodemographic questions, but these questions could also create even more groups to be analysed.

3.3.5 *Subjective well-being*

“Well-being can be understood as how people feel and how they function, both on a personal and a social level, and how they evaluate their lives as a whole” (Michaelson, Mahony, & Schifferes, 2012). ‘Feel’ refers to emotions like happiness or anxiety, ‘function’ refers to sense of competence or sense of belonging, by evaluate it is meant how they see their life as a comparison to the best possible life (Michaelson et al., 2012). This study will measure well-being through some of the questions in the questionnaire. The focus for this is to relate well-being to physical activity. This study used The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) created by NHS Health Scotland, University of Warwick and University of Edinburgh (Warwick, 2014b). The scale has been used in several research-studies (Warwick, 2014a), and has been validated as an indicator of population mental health and well-being for

a group of 3200 veterinary surgeons in the UK (Bartram, Yadegarfar, Sinclair, & Baldwin, 2011) as well as in several other studies. After the WEMWBS was recommended by the Warwick Medical School, and checked out, the researcher chose it has a tool to measure subjective well-being. The scale is a 14 item scale of mental well-being (Stewart-Brown & Janmohamed, 2008). Lowest score on the scale is 14, and the maximum is 70. The appropriate age group for participation for the scale is 16 years and above. WEMWBS is also said to be clear and easy to complete (Stewart-Brown & Janmohamed, 2008).

Permission for the translation was given from a Dr. Frances Taggart from the Warwick Medical School. The translation and back translation was done by the researcher and a professor at Høgskolen i Hedmark. One question at a time was translated to Norwegian and back again to English to verify the quality of the translation. The questions were later tested by a preliminary test and a pilot-study. After the study a translation guide for the WEMWBS was found. And after looking critically on the method of this research translation and back translation, it was concluded that the questions would not be any different if this study would have followed the translation guide.

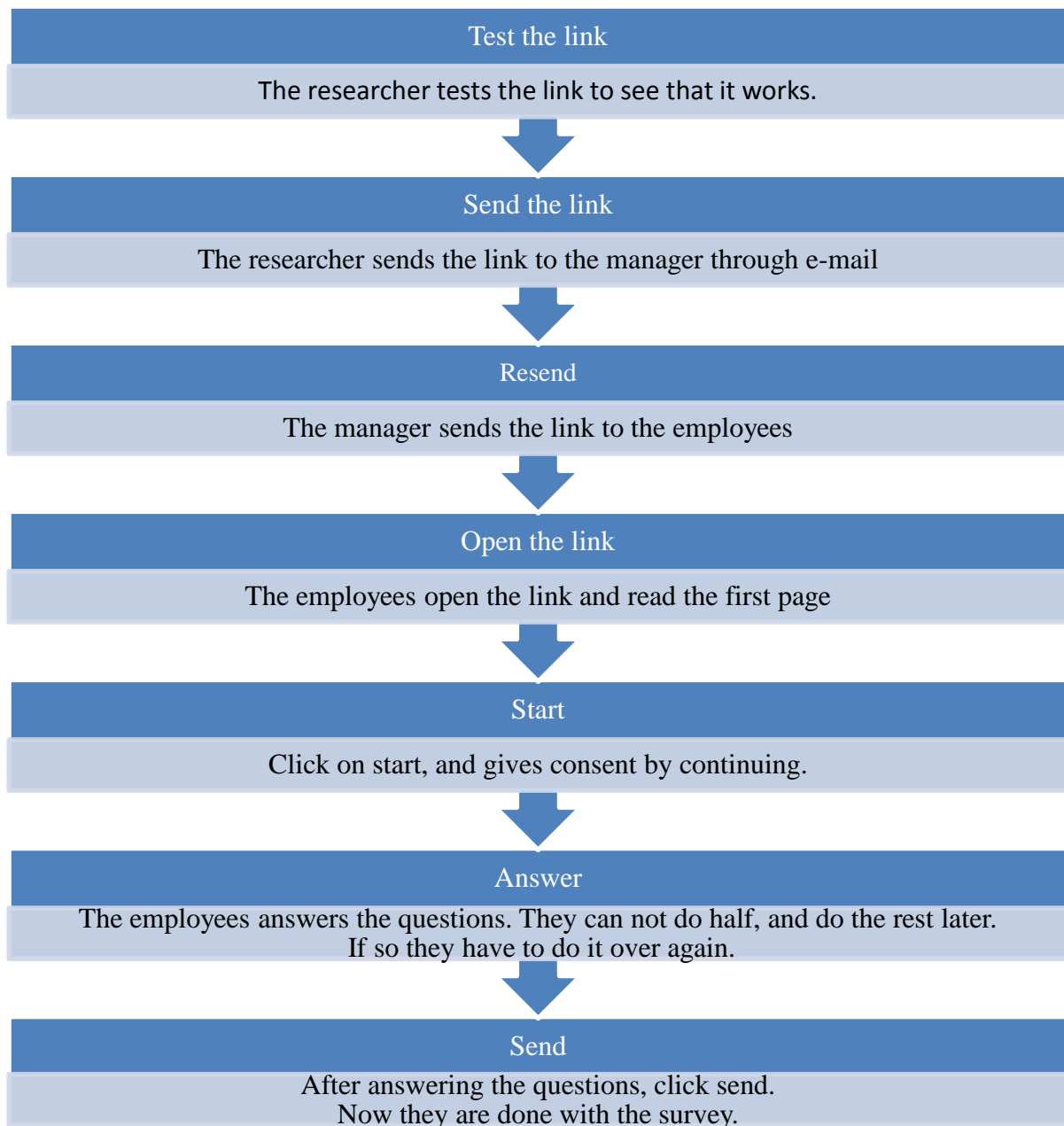
3.4 Preliminary work

It is always a good idea to make a pilot study before delivering the self-completion questionnaire to the participants (Bryman, 2012). This is not only to test out if the survey questions operate well enough, but also to ensure that the instrument functions well. By doing a pilot study the researcher will find out if there are any problems with the survey (Bryman, 2012). In this case, to find out if the participants will have any questions about the survey, since a researcher will not be present during the web-survey. Since this research is going to use mainly closed questions, a pilot study or pre-testing can help the research to generate different fixed answers, or to find out if an open question is needed. And also to hear from people if the structure of the survey is good enough or if anything should be changed. Maybe some questions should be moved around to help it become easier to understand (Bryman, 2012).

This study did a pre-test of the questionnaire with four students at the same education level. The student did the questionnaire and then talked about what they thought was unnecessary or out of place in the questionnaire. After discussion with the students the questionnaire was slightly changed, and was ready for the pilot-study.

The participants in the pilot study were hand-picked by the researcher. The researcher chose 15 participants in the age from 18 to 55, because it reflected the presumed age group of the workplace where the survey was to be implemented. Both female and male participants with different level of education were chosen. The pilot-study tested the whole survey using a link to Questback similar to the actual study. The pilot-study lasted three days. After the pilot-study, nothing was changed in the questionnaire since both the researcher and the participants had no problems with the questionnaire or the survey process.

3.5 Survey process



Here, the survey process is explained in detail with a flow diagram. This is from where the researcher tests the link to the survey, to where the participants send their responses.

Questback allows a questionnaire to be created in terms of colour, formatting, response styles etc. This can help in improving the response rates (Bryman, 2012). This research invited participants to visit a website where the questionnaire could be found and answered. The participants for the questionnaire can do it anytime they want, within the parameters the research offers. The answers can be programmed to be automatically downloaded into a database, so that the researcher have easy access to the answers (Bryman, 2012). Under the

answering of the questionnaires there may be some question routing that divide the participants (Bryman, 2012). For example: Do you participate in physical activity at work? yes/no. If the participant answers yes, they will avoid automatically questions like; for what reason do you not participate in physical activity?

The questionnaire was open to be answered for 61 days. The researcher first decided that the questionnaire could be open for 30 days. But since there were so few answers in the first 30 days, the researcher and the company agreed that the questionnaire could be open for one more month, and that the questionnaire would be announced once more on the internal website. After the 61 days, the questionnaire was closed and 49 participants had answered.

3.6 Workplace setting

Bryman define sample as: “the segment of the population that is selected for investigation. It is a subset of the population” (Bryman, 2012, p. 187). This study did a census, which is a study that do not just take a sample out of a population, but instead the whole population is the sample (Bryman, 2012). The company have a little over 550 employees. Since this study did a census in order to capture those who are participating in physical activity at the workplace and those who are not, everyone at the company had the opportunity to answer the questionnaire. The sample varied in age, sex, level of education, physical activity level and more. The sample for this study was everyone at the company.

The researchers came in contact with the company after they had heard that the employees at the company had the opportunity to exercise at the company gym.

The company that was the setting for the research had implemented the workplace physical activity programme in 2009. A health-promoting philosophy was also embedded in the company (personal communication, 9. September 2013). The company strived to be more health-aware and has several ideas about health-awareness that they have put into action. The company has approximately 550 employees, and of these around 25% are women. The age varies from 18 to 68+, but the average age is 46 years. Some of the employees were required to maintain physical strength and endurance, so they could carry out their physical work effectively and safely. All employees were allowed to exercise in work hours for 1.5 hours a week (personal communication, 9. September 2013).

Additionally, employees are invited to do a voluntary fitness test every year. Some employees can join a 15 minute workout during lunchtime. They have a company sports competition about who exercises the most, where you get more points if you exercise with a colleague (personal communication, 9. September 2013).

The company describes itself as valuing efficiency, in a pleasant, safe and innovative workplace. The company mission for promoting health is:

1. To help employees to be able to master their work
2. To build a culture with a positive health- and exercise-profile in the company
3. To make it possible for senior employees to remain longer at work (personal communication, 9. September 2013).

The company believes that reduced physical activity and less satisfaction in the work environment are large factors for weak employability (personal communication, 9. September 2013).

3.7 Data analysis and variables

It is important to think about the data analysis before starting to design a questionnaire (Bryman, 2012). In this research there was used both dichotomous variables and interval/ratio variables. Interval/ratio variables is where categories have the same value in distance (Bjørndal & Hofoss, 2004), for example the age question have an interval of 5; 21-25, 26-30 etc. Dichotomous variables are a little simpler, it only contains two categories, for example in this study; the question 'gender' has male and female as categories.

This study used Univariate analysis and Bivariate analysis. The difference between these two is that in Univariate analysis you only analyse one variable at a time, and in Bivariate analysis you analyse two variables at a time (Bryman, 2012). this type of analysis, the research used tables and diagrams to make the data as easily understandable as possible (Bryman, 2012). A t.test was conducted using Excel to test if the H_0 was true. And since the t.test is not reliable when the variance is large between groups (Bjørndal & Hofoss, 2004), it could not be used for certain groups.

Diagrams are one of the most used methods for displaying the quantitative data, since it is relatively easy to understand (Bryman, 2012). For example, you can display how much the different age-group participates in the physical activity.

For analysing the WEMWBS scores the study used the WEMWBS User Guide Version 1. Earlier the paper stated that the score can go from 14 to 70, Table 1 shows the WEMWBS and how it is scored.

Table 1 Example: Scoring of WEMWBS – with responses highlighted in yellow

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Total Score = 0 + 6 + 12 + 20 + 10 = 48

This research null hypothesis (H_0) is that there is no difference in subjective well-being in those who participate in workplace workout and those who do not.

Random error can occur in one study, thus the researchers have taken an important measure of dispersion which is based on a comparison with the mean and shows the spread around the mean (Bjørndal & Hofoss, 2004). This is the standard deviation. And the results for WEMWBS were presented with a diagram or a chart with focus on the mean score together with standard deviation in the result chapter.

The study did both a descriptive statistics analysis and analytic statistics analysis since the aim was to find a possible association between the worksite physical activity program and subjective well-being.

3.8 Ethical considerations (NSD)

It is important to be aware of the ethical issues that may come up when conducting social research (Bryman, 2012). In this study it was important to have a good relationship with the manager at the company who helped in facilitating the research. It is also important to treat the people at the company with respect by having no harm come to them, or not to hide any information that they should have (Bryman, 2012). This research has been approved by NSD, who required the research to provide participants with an information sheet where the study was explained. In the information sheet and on the front page of the questionnaire, it says that the participants will be anonymous. This can be achieved by using Questback, who has the opportunity to hide the ip- and email-address of the participants. Consent from the participants will be achieved by them answering the questionnaire, which is voluntary. The manager or any other employee should not pressure anyone to answer the questionnaire. It is entirely up to each employee whether or not they want to participate.

4. Results

4.1 Introduction

In this chapter, the results are presented in four sections. The first section describes the respondents in relation to sociodemographic information. Then the respondents' physical activity in and out of the workplace is described together with the reasons why they do or do not participate in physical activity. The third section describes the respondents' subjective wellbeing in the workplace. Finally, the chapter concludes with a section examining the relationship between workplace physical activity and respondents' subjective well-being.

4.2 Description of the respondents

In total, 49 people responded to the survey, 20 females (41%) and 29 males (59%). The total workforce at the time of the survey was around 550, which gives an approximate response rate of 9%. Table 2 shows the age profile of the respondents and indicates that just under three quarters (35 employees; 71%) of the sample were in the 31-50 year age group. Five employees (10%) did not have Norwegian as their native language. The percentages are rounded to whole numbers to explain the data.

Table 2: Age profile of respondents

Age (years)	<i>N</i>	Percentage
21-30	3	6
31-40	11	23
41-50	24	49
51-60	8	16
>60	3	6
Total	49	100

Table 3 shows that 35 (71%) employees had an education level of bachelor-degree or higher. The researcher does not know how this reflects the composition of the wider workforce in the company since the employees' information was not given. This may be a form of response bias in that people with higher level of education may have been more likely to respond to the questionnaire than those with a lower level of education.

Table 3: Level of education of respondents

	Male %	N	Female %	N	Total %	Total N
Lower secondary school	3	1	0	0	2	1
Upper secondary school	24	7	30	6	26	13
Bachelor-degree	38	11	45	9	41	20
Master-degree	35	10	25	5	31	15
Total	100	29	100	20	101*	49

*does not equal a 100% due to rounding the numbers to the nearest whole percent.

4.3 Who participated in physical activity

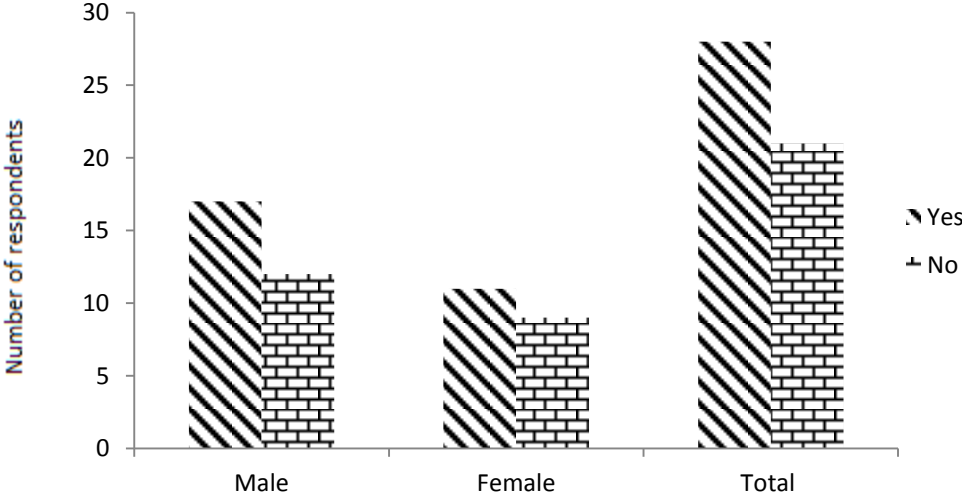
The questionnaire asked respondents about their physical activity in leisure time as well as during work time. Out of the 49 respondents, 42 employees (86%) worked out in their leisure time. Table 4 shows the number and proportion of those who worked out in their leisure time in relation to the age composition of the sample. Although the figures are small in some age categories, Table 4 shows that there is some variation across age categories, with those in the 41-50 age group (55%; 23 people) being most likely to be physically active during their leisure.

Table 4: Workout in leisure

Age (years)	Male	Female	Total	Percentage
21-30	1	2	3	7 %
31-40	2	7	9	22 %
41-50	15	8	23	55 %
51-60	4	2	6	14 %
>60	1	0	1	2 %
N	23	19	42	100 %

Figure 1 shows how many respondents reported they were physically active during the work day. Overall, 28 employees (57%) (11 women, 39%; and 17 men, 61%) reported that they worked out at the workplace. Of the 28 employees who participated in the workplace workout, 16 employees (57%) were in the 41-50 age group which is similar to the age group that works out most in leisure. Twenty four (49%; 13 men, 54% and 11 women, 46%) employees reported that they worked out both in leisure and at the workplace.

Figure 1: Who participated in physical activity in the workplace

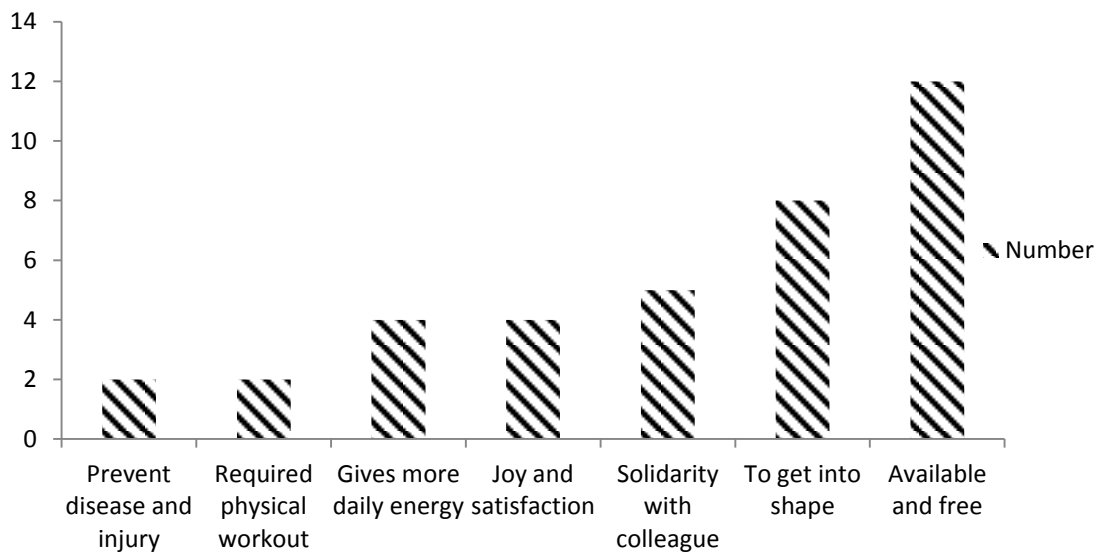


Of the 28 employees who worked out in the workplace, 25 (89%) worked out between 1-2 times a week. Of those 28 employees who worked out in the workplace, 23 (82%) reported spending approximately 60min or more on each workout. Only 3 (11%) of the 28 employees reported that they were required to physically train because of work requirements.

4.3.1 *Why respondents worked out at the workplace*

Figure 2 presents the reasons people gave for working out in the workplace. Everyone could give more than one answer. Out of the 28 employees who reported working out in the workplace, 12 (43%) reported that one of the key reasons for them to do so was because it was available and free.

Figure 2: Reasons for workplace workout



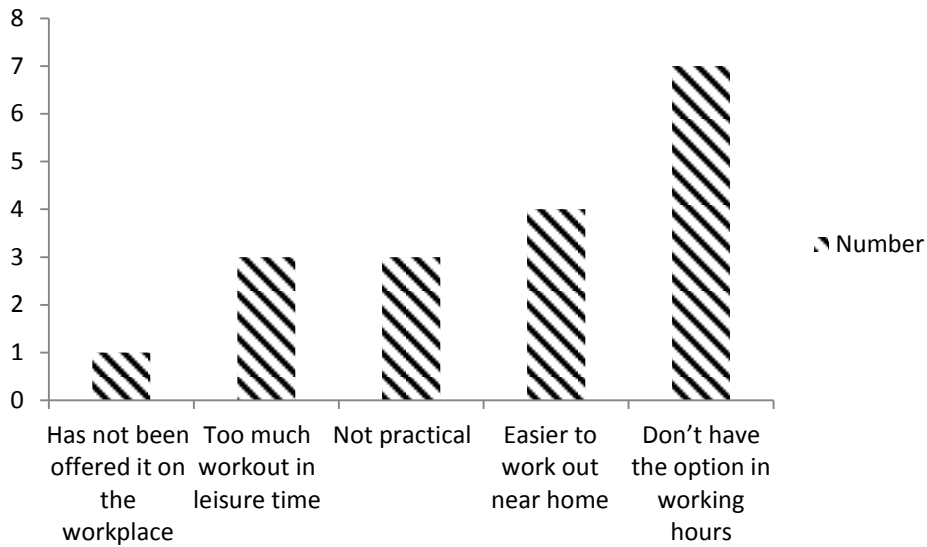
Responses to a question relating to the importance of the social aspect of working out in the workplace for the respondents, almost half of the 28 respondents (13; 46%, 7 men; 54% and 6 women; 46%) reported that the social aspect of their workout was important to them. The majority of these (11 employees; 85%) were in the ages 36-50. Of the 28 participants, 17 (61%, 9 men; 53% and 8 women; 47%) always worked out with a colleague, 9 (32%) sometimes worked out with a colleague, and only 2 (7%) worked out alone.

4.3.2 Possibility for workplace workout

Of the 49 respondents, 21 (43%) said that they did not work out in the workplace as shown in Figure 1. The majority of these (67%; 14) knew that they had the option to work out in the workplace but not all do.

Figure 3: presents the reasons why 14 respondents did not participate in the workplace workout. The reasons have been categorized from an open question to which everyone could give more than one answer. The largest category was 'do not have the option in work hours'. It should be noted that the researcher had confirmation that everyone had the opportunity for workplace physical activity for 1.5 hours a week. However, 7 (50%) of the 14 respondents reported that one reason for not participating in the workplace workout was that they did not have the option during working hours. Half of the respondents (7) also said that it was either not practical to work out at the workplace or that it was easier to work out near their home.

Figure 3: Reasons for not participating in workplace workout

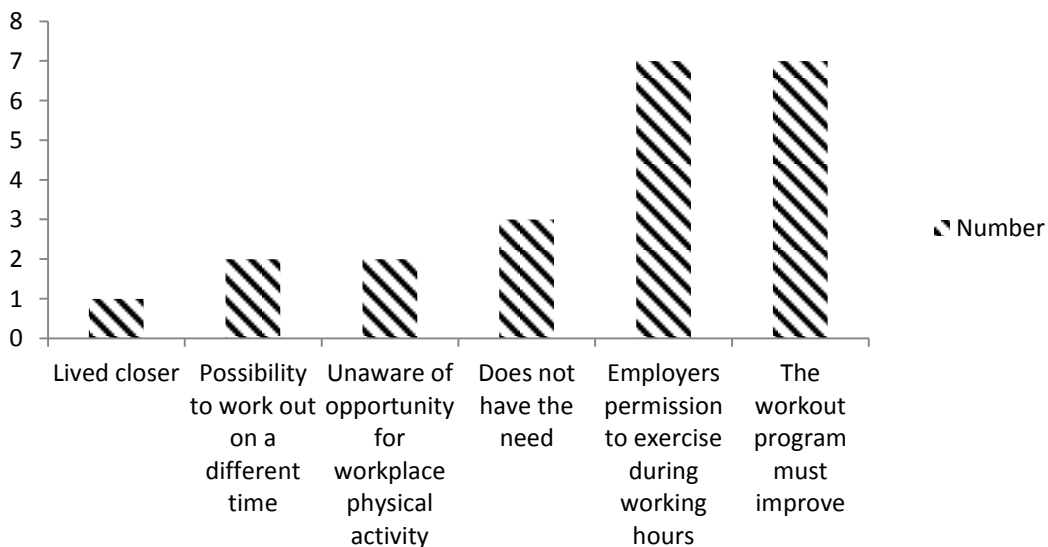


4.3.3 What is needed for you to start exercising in the workplace?

These six reasons in Figure 4 were categorized from responses to an open question which 21 employees answered. Everyone could give more than one answer.

A third of the respondents (7) reported that the workout programme had to improve for them to work out at the workplace. They wanted wardrobes, showers and spinning lessons. Another third (7) reported that they needed the employers' permission to exercise during working hours.

Figure 4: Reasons for what is needed to participate in the workplace workout

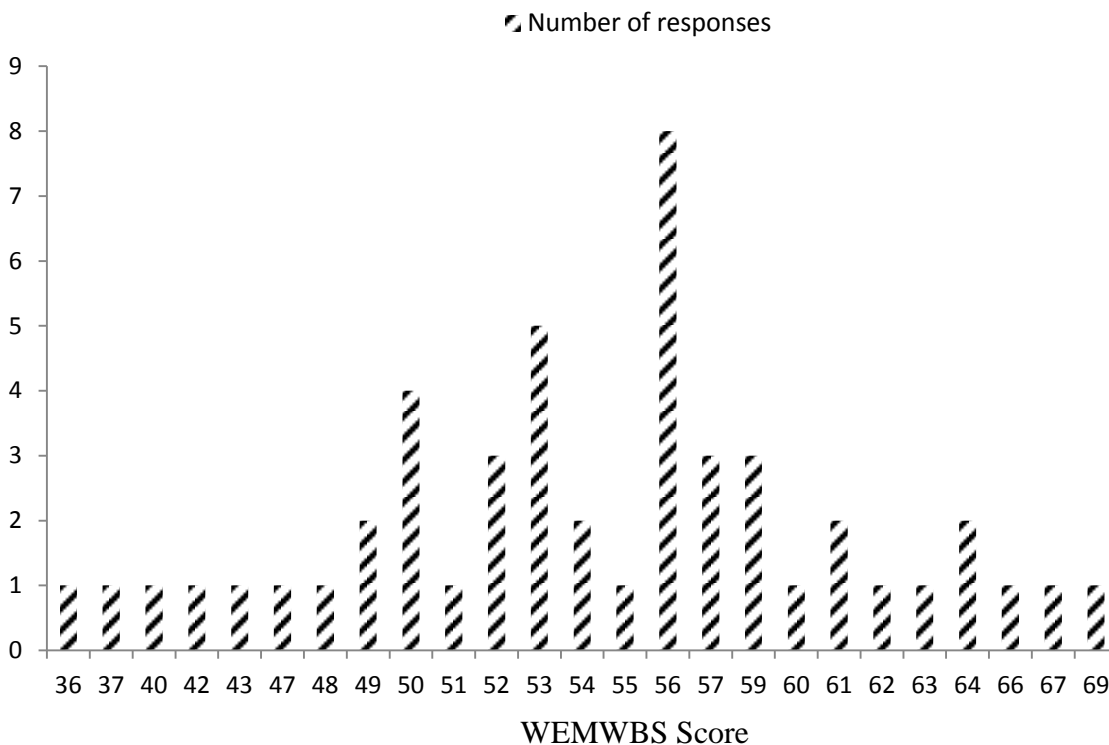


4.4 Subjective well-being in the workplace

All 49 respondents answered the WEMWBS, and this section show how the scores were distributed. There were no missing responses to any of the 14 items. The full range of possible scores is 14-70.

Figure 5 shows the distribution of the WEMWB scores for all 49 respondents. The graph shows a normal distribution, thus there are few scores in the tails of the graph. At the score of 49 the graph starts to go upwards and peaks at 56 (which means that 56 is the score with the highest number of responses). After 56, the graph goes down and flattens out at 66. The mean was 54.3, the standard deviation was 7.1, which tell us how much this sample is spread around the mean. There seem to be no population norms for Norway at the moment. However, the distribution shown in Figure 5 is similar to that of the reference population in Scotland (Stewart-Brown & Janmohamed, 2008). However, the Scottish sample shows a slight left skew which is absent from the Norwegian sample distribution. The mean from the Scottish population sample was 50.7 (SD=8.79) (Stewart-Brown & Janmohamed, 2008), while the mean in this study was higher at 54.3.

Figure 5: Distribution of WEMWBS scores for the 49 respondents



4.4.1 Mean WEMWBS score among the 49 respondents by various sub-groups

Table 5 below shows the number of responses (N) in each group, mean WEMWBS scores together with the standard deviation (SD).

Table 5: WEMWBS mean scores across groups (N= 49)

Variable	N	Mean	SD
Sex			
Male	29	54.0	7.3
Female	20	54.7	7.0
Age in years			
21-30	3	54.7	1.2
31-40	11	53.7	6.9
41-50	24	52.8	7.8
51-60	8	58.3	6.4
61 and over	3	56.7	7.0
Level of education			
Lower and upper secondary school	14	53.8	11.1
Bachelor-degree	20	54.5	4.3
Master-degree	15	54.5	5.9
Leisure workout			
Yes	42	54.2	7.4
No	7	54.4	5.5
Workplace workout participation			
Yes	28	54.0	8.3
No	21	54.6	5.5
Working out either home or workplace			
Yes	46	54.5	7.3
Not working out at home or workplace	3	50.7	1.5
Total	49	54.3	7.1

Although the response rate for the survey was low, similar patterns to the Scottish population samples have been found. The mean of the Norwegian sample was higher in every category, for sex, age, level of education and overall. The male and female groups in both the Scottish and Norwegian sample are not so different from each other. In the Scottish population the mean for male were 51.3, and female were 50.3, while in this study the male had a 0.7 lower mean than the female. Other similarities were with the age groups. At the younger age groups, the mean started a little over average, and then dropped a little over the next few age groups, and then it turned again around the age group of 55. In this study, this is quite similar, but the

mean jumps 5.5 from the age group 41-50 to 51-60. Within the groups of level of education, the Scottish population sample and this study sample both show a slight increase in the mean with higher education. But the differences were small.

Those who were physically active either at the workplace or outside of the workplace (46 employees) have a WEMWBS mean of 54.5. While those who are not physically active at all (3 employees) have a WEMWBS mean of 50.7. But since the second group is so small, one should be careful analysing the data.

The workplace workout participation categories are so similar in the mean, that it does not show any statistically significant differences. This was verified with a t.test where the p-value was 0.377, which says that the H_0 is true.

The leisure workout also shows that the mean is almost the same in the 'no' and 'yes' category, but the variance was too different for a t.test to be valid.

5. Discussion

5.1 Limitations of the study

In this study, a cross-sectional survey was used. A cross-sectional study gives an overview about the situation right now and cannot say what influences what (Bryman, 2012). In this study that was not the purpose either, but to find out who was using the workplace workout program and who does not, describe levels of subjective well-being, and explore the relationship between working out in the workplace with subjective well-being. This study has selected the appropriate study design to answer these research questions.

After translation and back translation was carried out on the WEMWBS and preliminary work and pilot testing was finished, the survey was started. A translation guide for the WEMWBS was found after the survey was finished. The researcher concluded that the translation and back translation without the translation guide did not compromise the validity of the WEMWBS on the basis of an analysis of the guide. Furthermore, the questions in the WEMWBS would not be any different if the guide was used. However, the researcher should have checked out if there was a translation guide, and used it if it was found.

Online survey response rates are often lower than for postal questionnaire surveys (Bryman, 2012). A preliminary work and a pilot-test were performed to ensure the quality of the questionnaire and the questions was high. The entire process with the pilot-test using Questback went without any problems, and did not need any redoing before the study. The response rate however was only 9% (49 respondents) of the total company and everyone had in theory the opportunity to answer it. If the research had to been done over again, it could be a good idea to post flyers about the study at the company. This might have been a successful strategy for increasing employees' awareness of the survey. The researcher could also have talked to some of the employees to make the study a conversation theme between employees to draw their attention to the survey. More follow up messages after a week or two could have been posted on the company intranet, to remind and ask employees to answer the survey. This may have increased the response rate (Bryman, 2012). There was also some discussion about providing some incentive to employees to encourage them to complete the questionnaire. However, there was no agreement on how to do this in a straightforward and practical way. However, this might also have increased the response rate.

In order to generalize from a sample back to the larger population from which the sample was taken, the sample must be statistically representative (Bryman, 2012). The sample should reflect in terms of demographics such as age, sex and level of education – the structure of the employees in the company. Lower response rates can lead to biases in the sample because some types of people are more likely to respond than others (Bryman, 2012). Therefore, response bias in this study is likely to have led to a biased sample, such that the study cannot really generalize to the wider population.

It is often important to have a large sample, which is more likely to give more precise results and means (Bjørndal & Hofoss, 2004). Given that this sample is relatively low, this may lead to less precise results in each group and total in the WEMWBS. This in turn causes the standard deviation around the mean to be wider. This is another reason why a higher response rate would have been beneficial to the study.

Another thing about the responses to the survey is that 71% of the respondents had a higher level of education. This can be a bias in the results. Does this suggest that it is more likely that employees with higher education level respond to a survey, or has the company a lot of employees with a high education? This research has not the data on the company employees, so we cannot know the answer to this question.

A bias in the results can be that the questions were interpreted in different ways by different employees during the survey. The methodology chapter reported several ways on how the study wanted to ensure this did not happen. But the researcher cannot be sure that it did not happen. However, the WEMWBS section of the questionnaire has been shown to be robust (Malcolm et al., 2013) and has been extensively tested for its reliability and validity in measuring subjective well-being (Stewart-Brown & Janmohamed, 2008).

In the early stages of the dissertation some communication errors between the researcher and the company occurred. This set the dissertation back a few weeks, which again set back the research. Having good communication with the setting of the research is highly important, and should have been a priority in all the early stages.

5.2 Discussion of the results

5.2.1 Participation

Out of the 49 respondents (29 male and 20 female), were 28 (17 male and 11 female) participating in workplace workout. The main reason for them to participate was that it was free and available. The 21 employees that did not participate in the workplace workout reported that the main reasons for not participating was that the program had to improve, and that they did not have the employers' permission during working hours.

In this study, the majority of those who participated in a workplace workout program had an upper secondary school education or higher. Waters et al. (2011) reports that most of the participants in their study of 'who participates in physical activity intervention trials' had postsecondary education, which is similar to this study. It is difficult to say if this result is common in relation to companies in Norway or elsewhere that has workplace workout programs, since the response rate was low and the researcher does not know what the percentage of women was in the company where the research took place.

Over half (57%) of the participants in the workplace workout program was in the age group of 41-50, which is again similar to the Waters et al. (2011) study. The age groups of the participants in the workplace workout program and those who work out at home are very similar. Physical activity participation in the workplace may simply provide opportunities for those who already are physically active in leisure and may not 'pull in' new recruits.

5.2.2 WEMWBS-score

This is one of the first studies in Norway to provide data on subjective well-being using the WEMWBS. The level of physical activity participation among the respondents was quite high compared to the report from Helsedirektoratet (2015). Physical activity participation is also higher among people with a higher level of education, and the respondents in this study included a large proportion of people with a high level of education.

This WEMWBS sample mean was 54.3, which is higher than the Scottish population sample (Stewart-Brown & Janmohamed, 2008). An explanation for this can be that the study sample has a relatively high level of education.

It may be the case that if physical activity has a relationship with subjective wellbeing, then it does not matter if it takes place during the workplace or during leisure time; what matters is

that people are physically active. This can be to an extent supported by the results. However, cross sectional studies can only show a statistical relationship and cannot say anything about cause and effect (Bryman, 2012).

Since the response rate on the survey was low, the sample from the company can be a bias and is therefore not statistically representative and cannot be generalized to the wider population.

5.2.3 *Company communication*

The employer might consider how this opportunity for workplace physical activity is communicated to employees. The findings suggest that it might not be as effective as believed to be, since several employees reported that they did not have the opportunity. There were also several employees who reported that it was not practical to workout at the workplace, or that the program had to improve. The employer might review how practical it is for all employees to participate and how it could be made more practical. Those who say they have ‘no option’ may mean that it is just not possible for them to participate, even though they know in theory that they have the possibility.

5.3 Public health policy and future research

Providing the opportunity for physical activity in the workplace creates spaces within which employees can mingle socially, away from work tasks, while at the same time being physically active. Not only are healthy employees more likely to be well-engaged at work with fewer absences, positive social relationships with other employees may contribute to better productivity and less conflict. These things are worth considering in the context of the potential value of workplace physical activity schemes. Workplace health promotion can give multiple positive effects in the employees and employers. There may well be not only individual benefits to this in terms of employees’ physical and mental health, but also benefits to the organization (WHO, 2013h). Some challenges for working out at the workplace can be that the facilities are not good enough, and have to be improved before employees start to use them (Schwetschenau et al., 2008). It can also be that some employees do not feel comfortable working out while other employees are around them (Schwetschenau et al., 2008). Before employers make the decision to implement a workplace workout program, they might want to research these challenges, and make the program satisfactory in quality and quantity enough for the employees to feel safe.

This type of research should be done at a larger scale in Norway to find out if a workplace workout program gives benefits in the Norwegian population. The WEMWBS is a good validated measure of subjective well-being, and should be further tested in Norway. Workplace schemes that are available to all could be a good strategy for addressing inequalities in health. However, it might be the case that all grades of employee (from managers to cleaners) need to be encouraged and allowed to participate.

5.4 Conclusion

The participants varied in sex, age and level of education. There were a total of 49 respondents to the questionnaire. Out of the 49 respondents, 35 had a bachelor degree or higher. Of the 49 respondents, 29 were male (17 participated in workplace workout and 12 did not) and 20 were female (11 participated in workplace workout and 9 did not). Of the 28 employees that participated in the workplace workout 16 of them was in the age group of 41-50.

The score of the WEMWBS varied from 33 to 69 of all respondents, with a mean of 54.3 (SD=7.1). The levels of subjective well-being was higher in this study than in the Scottish population (Stewart-Brown & Janmohamed, 2008). The subjective well-being does not seem to have a relationship with the workplace workout program since this study did not find any significant differences in subjective well-being between those who participated in workplace workout program and those who did not. However there were a few noticeable differences in the age and level of education groups. The difference in mean between the groups 'working out at home or workplace' and 'not working out at home or workplace' is 4.2. Be careful in analysing this number since the numbers of participants in those groups are so different.

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Appendix 1: Information sheet and questionnaire in Norwegian

Trening i arbeidstiden

Bakgrunn og formål

Formålet med studiet er å se hva som kan komme ut av trening i arbeidstid, annet enn forbedret fysisk helse, samtidig som å se hvem som benytter seg av muligheten til trening i arbeidstid. Hovedproblemstillingen er: På hvilken måte er deltakelse i fysisk trening på jobben knyttet til velvære? Oppgaven er en masterstudie ved Høgskolen i Hedmark, avdeling for folkehelsefag.

Utvalget i studiet er alle ansatte i din bedrift, siden dere har tilbud om trening i arbeidstid.

Hva innebærer deltakelse i studien?

Datainnsamlingen vil være et spørreskjema på nett. Det er helt anonymt å svare. De nærmeste personlighetsidentifiseringsspørsmålene vil være: kjønn, ca. alder og utdanningsnivå. Spørreskjemaet går ut på at dere vil svare på spørsmål om deres fysiske aktivitet og velvære.

Hva skjer med informasjonen om deg?

Alle personopplysninger vil bli behandlet konfidensielt. Det vil kun være forsker og veileder som har tilgang til det innsamlede datamaterialet. Denne dataen vil være beskyttet ved sikkert passord som bare forsker har tilgang på.

Deltakerne vil ikke kunne gjenkjennes i publikasjonen. Det er helt anonymt.

Prosjektet skal etter planen avsluttes 1. oktober. All rådata blir slettet etter dette tidspunktet.

Frivillig deltakelse

Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil alle opplysninger om deg bli anonymisert.

Dersom du har spørsmål til studien, ta kontakt med forsker Bjørnar Cornelius Harjang på telefon 918 52 408.

Studien er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste AS.

Din identitet vil holdes skjult.
Les om retningslinjer for personvern. (Åpnes i nytt vindu)



Generelle spørsmål:

1) * Kjønn

- Mann
 Kvinne

2) * Alder

Velg alternativ

3) * Høyest utdanningsnivå

- Grunnskole
 Videregående
 Bachelor eller tilsvarende
 Master eller tilsvarende
 PHD eller tilsvarende

4) * Er norsk ditt morsmål?

- Ja
 Nei



Spørsmål om fysisk aktivitet i de siste 2 ukene

5) * Trener du på fritiden?

- Ja
 Nei

6) * Trener du på arbeidsplassen?

- Ja
 Nei



Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
-)
- Hvis "Trener du på arbeidsplassen?" er lik "Ja"

7) * Hvor mange ganger i uken trener du på arbeidsplassen?

- 1 gang 2 ganger 3 ganger 4 ganger 5 ganger 6 ganger 7 eller flere ganger

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
 - Hvis "Trener du på arbeidsplassen?" er lik "Ja"
-)

8) * Hvor lenge trener du vanligvis? (På arbeidsplassen)

- Ca. 20 minutter
 Ca. 30 minutter
 Ca. 40 minutter
 Ca. 50 minutter
 Ca. 60 minutter
 Over 60 minutter

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
 - Hvis "Trener du på arbeidsplassen?" er lik "Ja"
-)

9) * Er du pålagt fysisk trening pga arbeidskrav?

- Ja
 Nei

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
 - Hvis "Trener du på arbeidsplassen?" er lik "Ja"
-)

10) * Hvilken trening gjør du på arbeidsplassen? (mulig å krysse av på flere svaralternativer)

- Utholdenhetstrening
 Styrketrening
 Bevegelighetstrening

Denne informasjonen vises kun i

forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
-)
- Hvis "Trener du på arbeidsplassen?" er lik "Ja"

11) * Hvorfor trener du på arbeidsplassen?

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
-)
- Hvis "Trener du på arbeidsplassen?" er lik "Ja"

12) * Er det sosiale knyttet til treningen viktig for deg?

- Ja
- Nei
- Noen ganger

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
-)
- Hvis "Trener du på arbeidsplassen?" er lik "Ja"

13) * Trener du sammen med kollegaer?

- Ja
- Nei
- Noen ganger

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
-)
- Hvis "Trener du på arbeidsplassen?" er lik "Nei"

14) * Kienner du til at du har muligheten til å trene nå

14) Kjenner du til at du har muligheten til å trene på arbeidsplassen?

- Ja
- Nei
- Usikker



Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
- Hvis "Kjenner du til at du har muligheten til å trene på arbeidsplassen?" er lik "Ja"
-)

15) * Hvorfor trener du ikke på arbeidsplassen?

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
- Hvis "Trener du på arbeidsplassen?" er lik "Nei"
-)

16) * Hva må til for at du skal begynne å trene på arbeidsplassen?



17) * Nedenfor finner du noen utsagn om følelser og tanker. Kryss av i boksen som best beskriver din opplevelse av hvert i løpet av de siste to ukene

	Nei	Nesten ikke	Noen ganger	Ofte	Hele tiden
Jeg har vært optimistisk med hensyn til fremtiden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg har følt meg nyttig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg har følt meg avslappet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg har følt meg interessert i	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

andre mennesker

Jeg har hatt energi til overs

Jeg har håndtert problemer godt

Jeg har tenkt klart

Jeg har følt meg bra

Jeg har følt nærhet til andre mennesker

Jeg har følt tro på meg selv

Jeg har vært i stand til å gjøre opp min egen mening om ting

Jeg har følt meg elsket

Jeg har vært interessert i nye ting

Jeg har følt meg munter

18) Andre kommentarer

Appendix 2: Approval for the use of WEMWBS 14 item scale.



Bjørnar Cornelius Harjang <b.cornelius.harjang@gmail.com>

Submission (ID: 141219431) receipt for the submission of /fac/med/research/platform/wemwbs/researchers/register

1 e-post

no-reply@warwick.ac.uk <no-reply@warwick.ac.uk>
Til: b.cornelius.harjang@gmail.com

19. april 2014 kl. 10.45

Thank you for completing this registration. If there are any issues regarding your proposed use of WEMWBS, a member of the team will be in touch within 2 weeks. If you do not hear from the team within this time, you have permission to use WEMWBS in the manner detailed in your submission shown below:

Question: Name:

Answer:

Bjørnar Cornelius Harjang

Question: Email address:

Answer:

b.cornelius.harjang@gmail.com

Question: Institution/Organisation

Answer:

Student at Høgskolen i Hedmark - Norway

Question: Name:

Answer:

Question: Email address:

Answer:

Question: Institution/Organisation

Answer:

Question: Type of Study

Answer:

Survey (WEMWBS completed once only)

Question: Description of proposed project:

(For translations, please state the language concerned)

Answer:

Master thesis. Research question: What is the relationship between workplace physical activity and mental well-being? Translated to Norwegian, and back again to english.

Question: Description of participants

Answer:

A company in norway with over 500 employees.

Question: Location

Answer:

Norway, Akershus.

Question: Gender

Answer:

Male and female.

Question: Ages

Answer:

From 18-70.

Question: Approximate Start Date

Answer:
05/05/2014

Question: WEMWBS version
Answer:
14 items

Question: Expected number of people to be studied
Answer:
About 500 will get the chance.

Question: Other information as relevant
Answer:
This is a Master thesis from a student in Norway. If you want to, I can send you my thesis after.

Question: Are you willing for us to share top level details of your research
Answer:
Yes

Appendix 3: Confirmation from NSD

Norsk samfunnsvitenskapelig datatjeneste AS

NORWEGIAN SOCIAL SCIENCE DATA SERVICES



Harald Hårfagres gate 29
N 5007 Bergen
Norway
Tel: +47-55 58 21 17
Fax: +47-55 58 96 50
nsd@nsd.uib.no
www.nsd.uib.no
Org.nr. 985 321 884

Miranda Thurston
Institutt for idrett og aktiv livsstil Høgskolen i Hedmark, campus Elverum
Postboks 400
2418 ELVERUM

Vår dato: 31.10.2013

Vår ref: 35928 / 2 / MSI

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 16.10.2013. All nødvendig informasjon om prosjektet forelå i sin helhet 30.10.2013. Meldingen gjelder prosjektet:

<i>35928</i>	<i>Trening på jobb - trusel og jobbtilfredshet</i>
<i>Behandlingsansvarlig</i>	<i>Høgskolen i Hedmark, ved institusjonens øverste leder</i>
<i>Daglig ansvarlig</i>	<i>Miranda Thurston</i>
<i>Student</i>	<i>Bjørnar Cornelius Harjang</i>

Etter gjennomgang av opplysninger gitt i meldeskjemaet og øvrig dokumentasjon, finner vi at prosjektet ikke medfører meldeplikt eller konsesjonsplikt etter personopplysningslovens §§ 31 og 33.

Dersom prosjektopplegget endres i forhold til de opplysninger som ligger til grunn for vår vurdering, skal prosjektet meldes på nytt. Endringsmeldinger gis via et eget skjema, <http://www.nsd.uib.no/personvern/meldeplikt/skjema.html>.

Vedlagt følger vår begrunnelse for hvorfor prosjektet ikke er meldepliktig.

Vennlig hilsen

Vigdis Namtvedt Kvalheim

Marte Byrkjeland

Kontaktperson: Marte Byrkjeland tlf: 55 58 33 48

Vedlegg: Prosjektvurdering

Kopi: Bjørnar Cornelius Harjang Meierigata 28 rom 105A 2406 ELVERUM

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Avdelingskontorer / District Offices

OSLO NSD Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no
TRONDHJELM NSD, Norges teknisk naturvitenskapelige universitet, 7491 Trondheim. Tel: +47 73 59 19 07. kytte.svarva@svt.ntnu.no
TROMSØ NSD, SVI, Universitetet i Tromsø, 9037 Tromsø. Tel: +47 77 61 43 36. nsdmaa@svuut.no



Vi viser til telefonsamtale med Bjørnar Cornelius Harjang den 30.10.2013. Personvernombudet kan ikke se at det i prosjektet behandles personopplysninger med elektroniske hjelpemidler, eller at det opprettes manuelt personregister som inneholder sensitive personopplysninger. Prosjektet vil dermed ikke omfattes av meldeplikten etter personopplysningsloven. Ombudet legger til grunn for sin vurdering at studenten benytter en anonym løsning hos Questback, jf. telefonsamtale. Det innebærer at verken student eller Questback har tilgang til kobling mellom svar og epost/IP-adresse. Vi forutsetter at dette avklares med Questback. Spørreskjemaet inneholder ikke spørsmål som direkte eller indirekte kan identifisere den enkelte respondent.

Alle opplysninger som behandles elektronisk i forbindelse med prosjektet må være anonyme. Med anonyme opplysninger forstås opplysninger som ikke på noe vis kan identifisere enkeltpersoner i et datamateriale, verken direkte gjennom navn eller personnummer, indirekte gjennom bakgrunnsvariabler eller gjennom navneliste/koblingsnøkkel eller krypteringsformel og kode.

Appendix 4: The Warwick-Edinburgh Mental Well-being Scale

Below are some statements about feelings and thoughts.

Please tick (✓) the box that best describes your experience of each over the **last 2 weeks**

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

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