

**EFFECTS OF A MINDFULNESS-BASED INTERVENTION ON
EXPERIENCED JOB CHARACTERISTICS:
Comparing the Intervention Group and the Control Group**

Valentina Trifoglio
Master's Thesis in Psychology
Department of Psychology
University of Jyväskylä
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UNIVERSITY OF JYVÄSKYLÄ

Department of Psychology

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Characteristics: Comparing the Intervention Group and the Control Group

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Supervisor: Ph.D. Anne Puolakanaho

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The aim of this study was to investigate the effects of an 8-week mindfulness intervention on experienced job characteristics, which included job clarity, job satisfaction, workload and job control. Furthermore background factors, such as changes in private life, were examined as moderators of changes. This study included 155 participants (mindfulness group $n=82$, control group $n=73$) belonging to the group of most burnout workers in Finland. The 8-week intervention consisted of weekly group meetings and daily mindfulness and ACT based homework, whereas the control group received treatment usually offered for burnout. Assessment was based on personalized web questionnaires delivered at three time points (pre, post and follow-up). Results were analyzed with a test of repeated measures of ANOVA.

Both groups experienced job characteristics in a more positive way during the intervention period; however positive changes in the intervention group were significantly greater compared to the control group. Regarding background factors group differences were found in *a change in private life, changing the workplace* and *a change in work circumstances*. Results suggest that mindfulness protects from difficult events in life and that a change of perspective is needed for a comprehensive change toward occupational well-being to occur.

Mindfulness is effective in changing one's perspective by increasing awareness in the present moment, by changing one's attitude and by helping recognizing and disengaging from unhelpful thoughts and habits. Further investigation is needed to examine how long lasting the effects of mindfulness are during a longer period of time and to confirm the results implying that mindfulness protects from difficult events and changes in life.

Keywords: mindfulness, work-site factors, job characteristics, occupational well-being

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1. INTRODUCTION

Reducing stress and bringing greater awareness to the present moment have become an important part of life, especially working life (Kabat-Zinn, 2014). Employees experiencing high levels of occupational stress are prone to greater health risks, loss of productivity and increased health care cost (Wolever, Bobinet, McCabe, Mackenzie, Fekete, Kusnick, & Baime, 2012). Thus it has become increasingly important to examine the processes contributing to the well-being of employees (De Lange, De Witte, & Notelaers, 2008). Mindfulness contributes to a sense of emotional stability, which has been associated to decreased burnout and higher job satisfaction (Fortney, Luchterhand, Zakletskaia, Zgierska, & Rakel, 2013).

Recent studies have concentrated on exploring connections between different areas of worklife as a cause of burnout and dissatisfaction in the work environment (Leiter, & Maslach, 2004; Maslach, & Leiter, 2008). Negatively experienced job characteristics, which are derived from the different areas of worklife, have been found to contribute to occupational ill-being (Puolakanaho, Tolvanen, Kinnunen, & Lappalainen, submitted). Since mindfulness is an effective way to change one's perspective, because it helps disengage from unhelpful thoughts and behaviour (Brown, & Ryan, 2003) and aims to change one's attitude (Shapiro, Carlson, Astin, & Freedman, 2006), it is expected to change one's perspective on experienced job characteristics as well. Thus a change of attitude toward job characteristics is expected to increase occupational well-being.

This study aims to investigate the effects of an 8-week mindfulness-based intervention on four experienced job characteristics by comparing the mindfulness based intervention and control groups. Since mindfulness practices are found to change one's perspective and increase job satisfaction, the mindfulness intervention group is expected to experience significantly greater gains regarding their perception of experienced job characteristics compared to the control group. In addition, since well-being in one area of life is found to reflect on other areas as well (Reichl, Leiter, & Spinach, 2014), we will also be examining the effects of background factors, such as changes in private life, on experienced job characteristics.

1.1 Mindfulness, ACT and Relational Frame Theory

The Muupu intervention and practices are based on Kabat-Zinn's mindfulness-based stress reduction-program (MBSR) and acceptance and commitment therapy (ACT). The intervention itself is based on the 8-week program designed by Mark Williams. The core of MBSR lies in paying attention to one's own thinking and to observe and analyze it while noticing its inaccuracies. According to Kabat-Zinn (2014) the essence of mindfulness is to know what you are doing while doing it. Focusing on present experiences adds value and knowledge to life (Kabat-Zinn, 2014). Mindfulness aims to a quality of consciousness that is characterized by clarity and vividness of moment-to-moment experiences and functioning (Brown, & Ryan, 2003). Awareness in the present moment brings clarity, emotional stability and wisdom (Kabat-Zinn, 2014). Thoughts and feelings are observed in a non-judgemental way without trying to control them (Ellis, 2006). This receptivity is necessary to truly concentrate on the present moment (Kiken, & Shook, 2011). The judgemental thinking combined with needs, cravings and demands are seen as the main problem and according to MBSR the mind can be trained to find serenity through awareness (Ellis, 2006). In mindfulness things are seen and accepted as they are, without trying to change them (Allen, Chambers, Knight, Blashki, Ciechomski, Hased, & Meadows, 2006).

ACT, as well as MBSR, is part of the cognitive behavioural therapy movement that concentrates on mindfulness and acceptance. In ACT the primary source of psychopathology is seen in the interaction between language (cognition) and uncertainty, which produces an inability to persist or change behaviour according to one's own values. This psychological inflexibility is seen to emerge from weak or unhelpful contextual control over language processes. People may act inconsistently from their chosen values and goals, when their behaviour is guided by inflexible verbal processes, such as rules or derived relation networks. The content of cognition is not seen as the problem directly, only when this content regulates behaviour in an unhelpful way. Cognitive fusion occurs when one is too concentrated on future or past events or on the conceptualized self trying to understand and explain psychological events even when unnecessary. This leads to inflexibility, experiential avoidance and losing contact with the present moment and life values (Hayes, Luoma, Bond, Masuda, & Lillis, 2005).

The main objective of ACT is to increase psychological flexibility through six core processes that target the main problems seen in ACT. Furthermore ACT focuses on developing the ability to contact the present moment more fully and to behave according to life values and goals. All the core processes are seen as positive psychological skills that should be practiced further even when well-

being improves. These core processes are: Acceptance, values, committed action cognitive defusion, contact with the present moment and self as context (Hayes et al., 2005). Acceptance and letting go through non-judgemental thinking and commitment are important parts of MBSR as well (Ellis, 2006).

Both mindfulness and ACT are based on the Relational Frame Theory (RFT). According to RFT the core of cognition and human language lays in the ability to relate events in an arbitrary way. This relational learning refers to the ability to relate events or objects to each other either by form or relation (non-arbitrary) or by a relational responding based on cues (arbitrary) (Hayes, 2004). Relational learning also includes bidirectionality, which means that relations between objects or events are seen as a two-way relation (if A is related to B, then B must be related to A) (Hayes, & Wilson 2003; Hayes, 2004). Arbitrary relational learning presents a problem for example when evaluative talk becomes a concrete reference to internal states. A feeling or thought might be seen as bad just because the event that caused it was bad (Hayes, & Wilson, 2003). This leads to the avoidance component. Negatively evaluated thoughts and feelings are tried to be avoided, however the rule itself, to avoid such thoughts, reconnects to them. Thus experiential avoidance leads to more stress and arousal, which in turn leads to more evaluative comparison and avoidance strategies (Hayes, & Wilson, 2003; Hayes, 2004; Hayes, 2005).

Mindfulness practices involve bringing complete attention to the present experience and paying attention to the present moment on purpose and in a non-judgmental way (Kabat-Zinn, 2003; Shapiro et al., 2006). Thus mindfulness encourages to a non-evaluative and deliberate contact with the present. Mindfulness techniques encourage observing one's thoughts and feelings without evaluating, which directly reduces the literal, evaluative language. The ultimate purpose is to target the excessive impact of human language and cognition and to widen and increase flexibility of actions and functions (Hayes, & Wilson, 2003). However mindfulness is not a goal-directed activity and practices are done with no expectations (Allan et al., 2006). According to mindfulness, a more open and flexible approach will lead to new, more valuable functions in contexts that have previously been problematic (Hayes, & Wilson, 2003).

In addition to incorporating mindfulness in everyday life, there is a variety of different mindfulness techniques, all of which have a meditative component (Allen et al., 2006). Mindfulness techniques focus on undermining the negative effects of human language and relational abilities, which may fuse the mind into evaluation, comparison and concentrating on past or future. These psychological functions are useful in many cases but rather dangerous when focused on human suffering and onto the negative aspects of events. A behaviour controlled by verbal rules is rigid and inflexible (Hayes, & Wilson, 2003).

1.2 Occupational Burnout and Job Characteristics

Occupational burnout is defined as a psychological syndrome resulting from interpersonal stressors in the work environment and is a negative effect of chronic work stress. Burnout can be considered as prolonged job stress, where demands exceed an individual's resources (Maslach, & Shaufeli 1993). This psychological syndrome is characterized by three key dimensions: overwhelming exhaustion, cynicism, and feelings of inefficacy and lack of accomplishment (Maslach 1982; Maslach, Shaufeli, & Leiter, 2001). The exhaustion component includes feelings of being overextended and shortness of emotional and physical resources (Maslach, & Leiter, 2008). Furthermore exhaustion leads to a change of attitude toward work and one's own work role (Ahola, 2007). Cynicism is characterized by a negative and callous response to the job and feelings of excessive detachment from the job. The inefficacy and reduced accomplishment dimension refers to a sense of incompetence and lack of productivity and achievement at work (Maslach, & Leiter, 2008; Maslach et al., 2001).

Exhaustion reflects the stress dimension of burnout and prompts action to distance oneself emotionally and cognitively from work, most likely as a way of coping with work overload. Distancing oneself from work, or depersonalization, is an immediate coping reaction which leads to a cynical or indifferent attitude toward work. Experiences of reduced personal accomplishment can result from either two of the burnout dimensions or from both combined. Overwhelming demands that contribute to exhaustion and cynicism most probably affects one's sense of effectiveness as well. In general, burnout is seen as a prolonged response to chronic job stressors (Maslach et al., 2001).

Burnout is specific to the work context, thus situational factors are the prime correlates of this syndrome. Research shows that burnout is particularly a response to job demands such as work overload, time pressure and emotional demand. Other job demands affecting experiences of burnout is role conflict, which occurs when conflicting job demands must be met, and role ambiguity, which results from a lack of adequate information to perform well. (Maslach et al., 2001).

According to recent studies a critical source of burnout is the job-person mismatch in six different areas of worklife. These areas of worklife are workload, control, reward, community, fairness and values. These areas reflect different aspects of burnout, taking to account job demands, social and interpersonal aspects and the power of job goals and expectations. Each area describes incompatibility between the nature of the job and the nature of the person, which increases experiences of burnout (Leiter, & Maslach, 2004; Maslach, & Leiter, 2008). Puolakanaho et al.

have used a job characteristics tool to examine these different areas of worklife and it consists of four different work-site factors: *job clarity* (including fairness and climate), *job satisfaction* (including meaningfulness, achievement and engagement), *workload* and *job control*. Their study found the tool to predict occupational well-being (Puolakanaho, et. al, submitted). This tool is used in this study to examine changes in the experienced job characteristics. Studies have highlighted the importance of individual and contextual factors, thus a job-person fit model is rather appropriate to understand burnout further (Leiter, & Maslach, 2004).

1.3 Mindfulness and Experienced Job Characteristics

Mindfulness training helps cultivating serenity, clear thinking, compassion and open-heartedness. Awareness generates a sense of emotional balance, and recognizing unhelpful thoughts and behaviours allows finding new creative ways of responding. Furthermore increased emotional awareness has been associated to decreased burnout and higher job satisfaction (Fortney et al., 2013). Burnout is associated with job dissatisfaction, thus increasing experiences of job satisfaction will in turn decrease experiences of burnout and increase occupational well-being (Maslach, & Leiter 2008). Mindfulness increases situational awareness and positive responses to stressful situations (Zeller, & Levin, 2013). Furthermore it helps individuals to disengage from automatic thoughts, habits and unhealthy behaviour (Brown, & Ryan, 2003). This conscious attention to thoughts and behaviour allows individuals to respond to stressful situations in healthier ways (Zeller, & Levin, 2013). Thus these changes of attitude and perspective are expected to change perception of experienced job characteristics as well.

A common notion of burnout is that decreased effectiveness occurs because of negative attitudes and behaviour (Maslach, & Shaufeli, 1993). One fundamental component of mindfulness is exactly attitude, how one pays attention to present experiences, thus different mindfulness practices aim to alter one's attitude (Shapiro et al., 2006), which in turn is expected to increase job satisfaction. Furthermore regulating emotions related to stressors and avoidance or escape coping have been found to contribute to all three dimensions of burnout, especially high levels of emotional exhaustion and depersonalization (Hätinen, Mäkikangas, Kinnunen, & Pekkonen, 2013). Mindfulness directly focuses on undermining the effects of those negative thoughts and avoidance (Hayes, & Wilson, 2003). In the three-dimensional model of burnout the individual is placed within the social context of the workplace and involves the person's conception of both self and others

(Maslach, 1993; Maslach, & Leiter, 2008). Through altering one's attitude and by increasing awareness in the present moment the conception of both self and others changes and experiences of job satisfaction and clarity are expected to increase.

A change of attitude reflects on life in its entirety. Studies on the relation between work and non-work areas in life have concluded that a conflict in either area reflects on the other and contributes to dissatisfaction toward work, health problems and feelings of stress and strain. Strain is seen to reflect on different domains of life, which prevents fully recovering from stress (Reichl, Leiter, & Spinach, 2014). Based on this bidirectionality, we accordingly assume well-being to reflect from one area of life onto other domains of life as well. Furthermore since mindfulness changes one's perspective on life in its entirety, these changes are expected to reflect on both work and non-work areas. Therefore we will be examining the effects of some life changes and other background factors on experienced job characteristics and how these changes relate to practicing mindfulness. Through examining the effects of life changes on experienced job characteristics we are bringing a new perspective on studies related to mindfulness and areas of worklife.

Previous studies have found that mindfulness interventions decrease experiences of burnout and stress and improve mood and emotional stability (Fortney et al., 2013; Krasner, Epstein, Beckman, Suchman, Chapman, Mooney, & Quill, 2009; McGarrigle, & Walsh, 2011; Shapiro, Astin, Bishop, & Cordova, 2005). Most of the previous studies concentrate on specific occupational groups such as physicians, social workers or teachers, thus this study contributes in giving a broader perspective on the effects of mindfulness, since it includes a wide range of different occupations. Mindfulness has also been found to increase optimism and positive judgment (Kike, & Shook, 2011), reduce negative bias (Bishop, 2002; Kike, & Shook, 2011) and decrease self-reported pessimism (Brown, & Ryan 2003). A more optimistic attitude increases well-being and thus is expected to increase job satisfaction and change the way job characteristics are experienced.

1.4 Aims of the Current Study

The aim of the present study was to investigate whether the mindfulness intervention changed the way job characteristics were experienced by comparing the results of the mindfulness intervention group to the control group. The participants consisted of 155 burnout workers in Finland, randomly divided into two study groups. Furthermore the impact of background factors, such as *changes in private life*, was examined as well.

Study questions:

1. How do the mindfulness intervention group and the control group differ in their experienced changes of job characteristics during the study period?
2. Do background factors affect the way job characteristics are experienced?

Based on previously presented theoretical and empirical evidence, hypotheses are:

H1: The intervention group experiences job characteristics more positively than the control group, especially regarding job satisfaction.

H2: Background factors, such as changes in private life, may moderate changes in the experienced job characteristics.

2. METHOD

2.1 Participants and Procedure

The current data was drawn from the “Muupu” (The Effectiveness of Mindfulness Practices in the Recovery of Burnout) research project. The 155 (78.7% females, $n=122$) participants of this study were part of a bigger sample (randomized control study with 218 participants) of the most burnout workers in Finland, with ages ranging from 27-60 ($M=47.25$, $SD=8.40$) and with different educational background. The participants included, were all those whose data was available when this study initiated. The participants were randomized into two study groups: the mindfulness intervention group ($n=82$) and the control group ($n=73$). After the intervention (post-follow-up) 9 participants dropped out of the study, leaving 146 participants to be analyzed for the follow-up period.

The participants were recruited for the study with newspaper and webpage announcements, and by being informed of the project by their employee health care units. The specific webpage dedicated to enrolment was open for anyone interested in the study, and the candidates were interviewed after registration. Based on the interview and the enrolling questionnaires on the website, participants were selected for the randomization procedure. The inclusion criteria consisted of an age between 25-60 years, a current working-life, a daily internet connection and belonging to the group of most exhausted workers in Finland (belonging to the 25 percentile of age group with a minimum of 39-47 points in the BBI-15 questionnaire (Näätänen, & Kiuru, 2003)). Exclusion criteria consisted of regular psychological or somatic conditions, psychotherapy, acute pharmaceutical changes, or other practical reasons that precluded the participation in the program. In addition the pilot group and the participants who dropped out after the first measurement (pre-post) were excluded from the current study.

After the selection, participants were paired based on age, gender and educational background. Each pair was then randomly divided either in the mindfulness intervention group or to the control group. The intervention, which consisted of group meetings once a week, lasted 8 weeks. The group meetings consisted of mindfulness and ACT practices, such as concentrating on the present moment and defining one’s own values, and discussions around these practices and the feelings they aroused. In addition participants were given homework after each meeting. During the study the participants received personalized web questionnaires at three time points: before the intervention

(pre), after the intervention (post), and six months after the pre-measurement (follow-up). Results will be examined in the next chapter.

2.2 Measures

Experiences of job characteristics were measured with the Job Characteristic (JOCHA) assessment tool (Puolakanaho et al., submitted), which reflects four different work-site factors: *JOCHA 1: Job clarity*, including fairness and climate (17 questions; pre $\alpha=.87$, post $\alpha=.90$, f-up $\alpha=.91$), *JOCHA 2: Job satisfaction*, including meaningfulness, achievements and engagement; (13 questions; pre $\alpha=.80$, post $\alpha=.82$, f-up $\alpha=.83$), *JOCHA 3: Workload* (11 questions; pre $\alpha=.83$, post $\alpha=.81$, f-up $\alpha=.84$), *JOCHA 4: Job control* (8 questions; pre $\alpha=.78$, post $\alpha=.79$, f-up $\alpha=.79$). Results were measured on a scale of 1-5. The JOCHA -factors were derived from the General Nordic Questionnaire of Psychological and Social Factors at Work (QPSNordic; Elo et al., 2001) and Work Stress Questionnaire (WSQ; Elo et al., 2012), which is a shortened version of the QPSNordic, used to evaluate occupational stress in work practice. The internal validity of the scales was good, with Cronbach Alpha -values of over .78 for each of the four JOCHA -factors.

Background factors, tested for their effects on the JOCHA factors, included *age* (continuous), *gender* (1=male, 2=female) and *education* (1= occupational course, 2=vocational school, 3=graduate degree, 4=none of the mentioned), *working hours* (1=0-20h, 2=21-30, 3=31-40, 4=41-50, 5=over 51h), *change of workplace* (1=change of workplace, 2=no change), *a change in private life* (1= if any changes, 2=no change) and *changes in work circumstances* (1= if any changes, 2=no change). *A change in private life* included changes such as marriage or divorce, losing a partner, falling severely ill, unemployment or graduating. *Changes in work circumstances* included changes or decrease of work tasks, a change of superior or co-workers and decrease of working hours or sick leave. All background factors were measured in the post questionnaire.

2.3 Analysis Strategies

The statistical analyses were performed in three phases: (a) firstly the JOCHA -factors were assembled and tested for reliability, (b) then a test of repeated measures (rANOVA) was performed

for all the four JOCHA factors at all three time points (pre, post, f-up) to explore within and between group changes, (c) and finally the background factors were tested for their effects on the JOCHA factor outcomes.

3. RESULTS

3.1 Changes in Experienced Job Characteristics

As expected the intervention group experienced higher levels of job satisfaction and job clarity compared to the control group. However the control group also reported higher levels of job satisfaction and clarity compared to the initial measurement. A significant change was found in all the JOCHA factors (see Table 2) but only in JOCHA2 and JOCHA1 a group difference was eminent. The means and standard deviations of all four JOCHA factors for both the mindfulness intervention group and the control group can be found in Table 1.

TABLE 1. Means and standard deviation for all JOCHA factors and for both study groups

	JOCHA1		JOCHA2		JOCHA3		JOCHA4	
	MFG	CG	MFG	CG	MFG	CG	MFG	CG
	<i>M(SD)</i>							
Pre	3.37(.607)	3.22(.656)	3.57(.517)	3.47(.478)	3.75(.582)	3.73(.602)	3.54(.713)	3.55(.676)
Post	3.50(.670)	3.28(.625)	3.85(.481)	3.62(.502)	3.59(.562)	3.64(.527)	3.68(.689)	3.59(.672)
Follow-up	3.55(.637)	3.32(.672)	3.88(.527)	3.65(.469)	3.53(.583)	3.54(.616)	3.69(.680)	3.63(.563)

Note: Mean (SD) $n=147$; JOCHA1: Job clarity, JOCHA2: Job satisfaction, JOCHA3: Workload, JOCHA4: Job control; MFG: mindfulness group, CG: control group

TABLE 2. Overall change during intervention (pre-post-f-up) in JOCHA factors (rANOVA table)

	F	df	P
JOCHA1	6.81	2, 144	.001
JOCHA2	25.44	2, 144	<.001
JOCHA3	15.94	2, 144	<.001
JOCHA4	6.33	2, 144	.002

Note: Significant at the $p < 0.05$ level.

As expected, the rANOVA results showed a significant change in the JOCHA2 factor during the intervention (pre-post) (see Table 2). The change was parallel for the study groups ($F(2, 144)=1.95$, $p=.146$), but the mindfulness group scored higher levels than the control group $F(1, 145)=6.40$, $p=.012$ (Figure 1).

Regarding the JOCHA1 factor a significant change was found for both study groups (see Table 2), the change was parallel ($F(2, 144)=.61$, $p=.544$), but the mindfulness intervention group scored higher than the control group ($F(1, 145)=4.10$, $p=.045$). Furthermore a significant change was found for both JOCHA3 and JOCHA4 as well, but with no eminent group differences. See Table 2 for the rANOVA results. Furthermore the JOCHA3 factor was the only one to have significant change also between the post- and follow-up time points $F(1,145)=5.49$, $p=.020$.

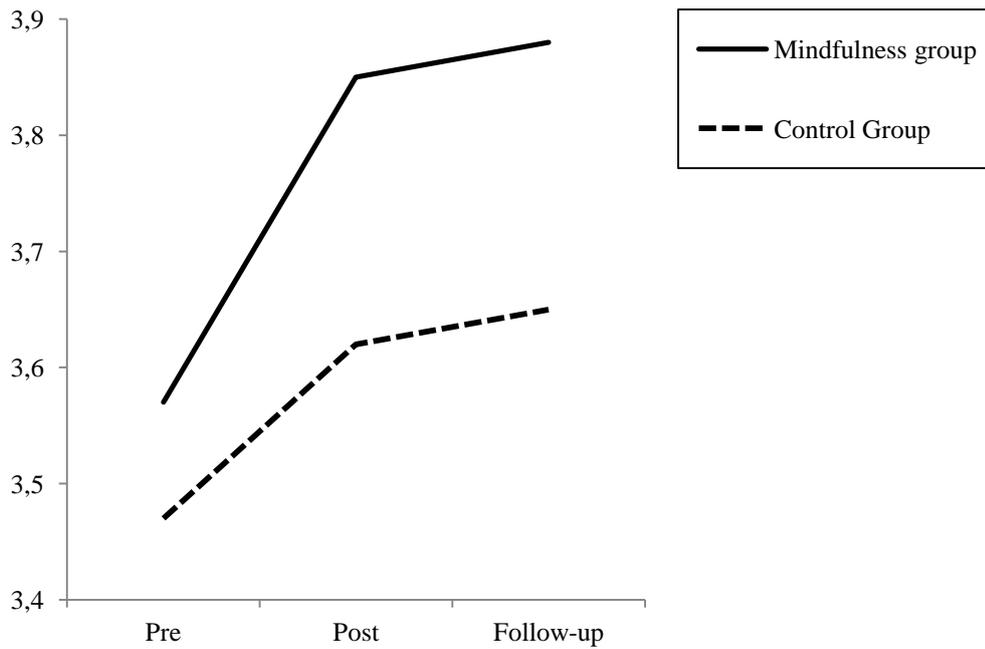


FIGURE 1. Differences between study groups regarding experiences of job satisfaction (JOCHA2)

3.2 Effects of background factors

Background factors were tested including them one by one in the rANOVA test and only *a change in private life, change of workplace and a change in work circumstances* had an effect on the outcome factors. Means and standard deviation of background factors can be found in Table 3. A t-test was performed to compare study groups regarding the background factors and no significant differences were found.

TABLE 3. Means and standard deviation of background factors for both study groups

	MFG	CG
	M(SD)	M(SD)
Change in private life	1.87(.343)	1.86(.346)
Change of workplace	1.98(.155)	1.96(.200)
Change in work circumstances	1.77(.425)	1.67(.473)

Note: Mean (SD) n=147; MFG: mindfulness group, CG: control group

Changes in private life and change of workplace showed significant effect on the JOCHA2 factor. If the control group encountered a life change, the experienced job satisfaction decreased significantly during intervention. However a dramatic life change had no effect on the mindfulness group, their experiences of job satisfaction continued to rise regardless of a life change (Measure*Group*Lifechange $F(2, 142)=3.73, p=.026$). Figure 2 shows how a change in private life affects the scores of the control group during intervention.

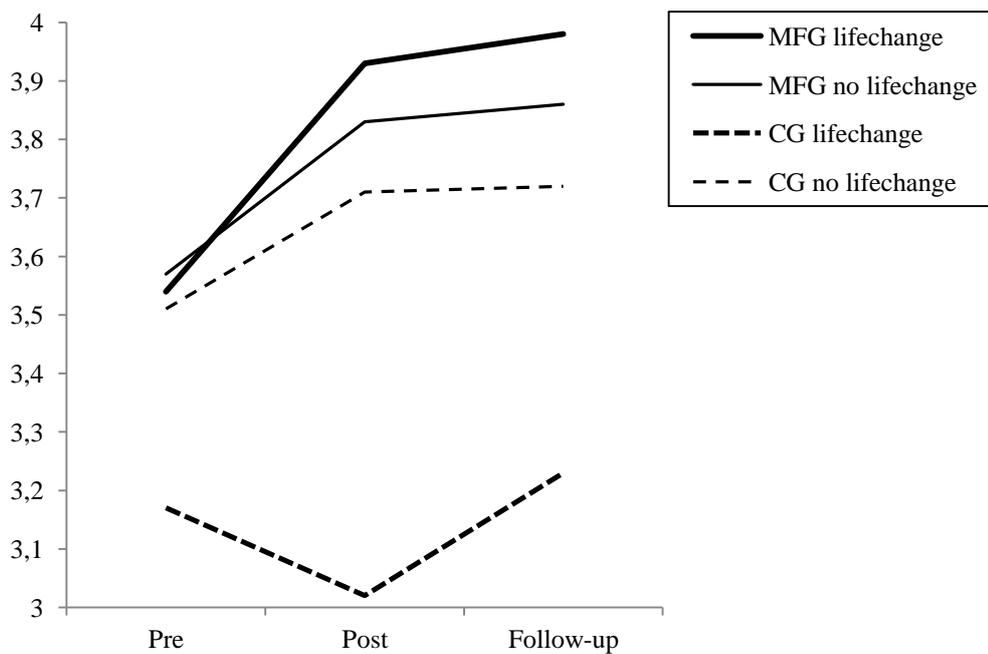


FIGURE 2. Effects of “changes in private life” on experienced job satisfaction (JOCHA2)

Changing the workplace affected only the mindfulness group regarding the JOCHA2 scores. If a member of the mindfulness group had changed their workplace during the intervention, they scored higher regarding the JOCHA2 factor (Measure*Workchange $F(2, 143)=3.88, p=.023$), thus experiencing higher levels of job satisfaction. See the effect of *changing the workplace* in Figure 3.

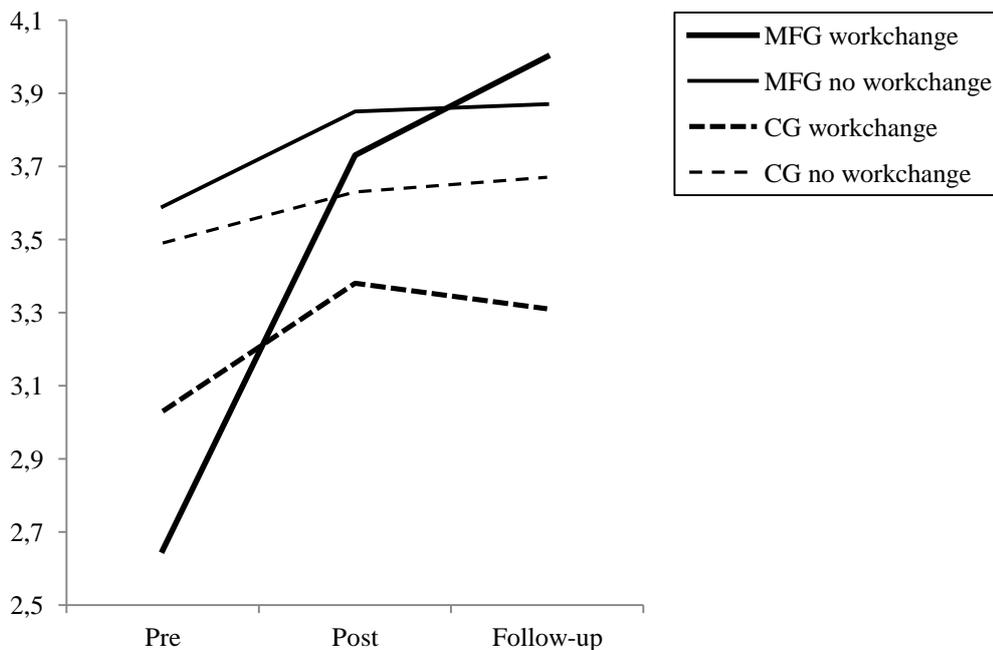


FIGURE 3. Effects of “change of workplace” on experiences of job satisfaction (JOCHA2)

In addition a change in work circumstances ($M(SD)=1.72(.449)$) affected the mindfulness intervention group regarding factor JOCHA1 (Measure*Circumstancechange $F(2, 143)=5.22, p=.007$). The mindfulness intervention group experienced a higher level of *job clarity* when a change in their working circumstances was made. The control group did not experience significant differences regarding *job clarity* even if changes in their working circumstances were made.

Furthermore a change of workplace affected the mindfulness intervention group regarding JOCHA3 scores during the follow-up period (post-follow-up) (Measure*Workchange $F(2, 142)=7.27, p=.001$). If a participant of the mindfulness group changed their workplace during the follow-up period, their experiences of *workload* decreased significantly during that time. This effect was not evident among the control group when changing the workplace.

4. DISCUSSION

The main purpose of this study was to find out if the mindfulness intervention had been successful in changing experiences of job characteristics. Furthermore this study investigated the effects of background factors, such as life changes, on experienced job characteristics. The participants were randomly divided into the mindfulness intervention group and the control group, and differences among the two study groups were investigated to find out the effects of the mindfulness intervention. The experienced job characteristics were measured using a four-dimensional *Job Characteristics* factor consisting of a) *job clarity* (including fairness and climate) b) *job satisfaction* (including meaningfulness, achievements and engagement) c) *workload* and d) *job control*. Experiences of job satisfaction were expected to rise among the mindfulness intervention group, since mindfulness as a method concentrates on improving the qualities included in this dimension.

As a result hypotheses were supported and the mindfulness group indeed experienced more job satisfaction and clarity than the control group. In addition mindfulness seems to protect from difficult life changes since they did not affect the mindfulness group like the control group, whose experiences of job satisfaction decreased significantly if a dramatic life change occurred. Results also supported the fact that a change of attitude is essential to increase experiences of job satisfaction and job clarity. This study contributes in expanding knowledge on the opportunities of mindfulness in changing the way job characteristics, and more widely our environment, are experienced. Results will be discussed further in the next chapter.

4.1 Mindfulness Affects Experiences of Job Characteristics

As expected, the mindfulness intervention had a significant effect on the participants especially regarding *job satisfaction* and *job clarity*, since mindfulness is seen to affect these qualities. Mindfulness practices concentrate on increasing emotional awareness and non-judgemental thinking, which have been associated to decreased burnout and higher job satisfaction (Fortney et al., 2013). However changes were evident for the participants of the control group as well, which can be explained partly by their use of different alleviation methods outside of the intervention. Their interest of mindfulness, due to the study, may have increased their use of mindfulness practices as well. Furthermore awareness of being part of a study, behavior changes regardless of

requests of continuing life as usual. Awareness of being in an occupational burnout alleviation study may also increase their urge to alleviate experiences of burnout, thus increasing job satisfaction.

One of the most interesting findings was how *a change in private life* affected the study groups. If a dramatic change occurred to the control group, their experiences of *job satisfaction* decreased significantly. However, a dramatic life change had no effect on the mindfulness group, their experiences of this dimension continued to rise regardless of a life change. This suggests that mindfulness protects from difficult or stressful events and changes in life. Mindfulness contributes directly to emotional balance and helps recognizing unhelpful thoughts and behaviours and finding new creative ways of responding (Fortney et al., 2013). Furthermore awareness directly increases well-being (Brown, & Ryan, 2003). Thus through mindfulness practices difficult changes in life can be confronted and experienced in a less stressful way. In addition well-being at work directly contributes to well-being on other life domains, therefore the mindfulness group, who experienced their job characteristics in a more positive way, perceive non-work areas in life more positively as well.

Another significant finding was the effect of *changing the workplace*. A change of work environment for the mindfulness intervention group increased the experiences of *job satisfaction*. However a change was not eminent for the control group even if they changed the workplace. This finding suggests that changing one's work environment is not necessarily enough to increase job satisfaction, but a comprehensive change in how we think and behave, in this case through mindfulness, strengthens the good effects of changing the workplace. Mindfulness changes one's attitude (Shapiro et al., 2006) and helps disengage from automatic thoughts, habits and harmful behaviour which in turn increases well-being despite the situation (Brown, & Ryan, 2003). In addition mindfulness leads to a more open and flexible approach, which increases well-being in situations that have previously been problematic (Hayes, & Wilson, 2003).

Changes in work circumstances had a positive effect on the mindfulness intervention group as well. Their experiences of *job clarity* increased if changes were made. Again, this was not the case for the control group, even if their work circumstances changed, their experiences of this work-site factor did not change. Recent studies have found that job changes contribute to increased occupational well-being (de Lange et al., 2011) however this finding suggests that job changes alone are not effective if not combined with attitudinal changes. Mindfulness practice seems to have a comprehensive impact on how one perceives their environment and as mentioned above, a change of attitude increases well-being and trying to change only the outside world is most likely an ineffective, short-term solution. Furthermore mindfulness increases optimism and positive judgment

(Kiken, & Shook, 2011) which reflects here as perceiving the work environment in a more positive way.

The workload was the only work-site factor to have a significant change during the follow-up period. Both study groups experienced a significant decrease of workload during intervention and follow-up. This can be explained by their motivation to increase their experiences of well-being at work. Participating to the mindfulness study was a wake-up call for many participants to change their circumstances regarding their work behavior. Decreasing the workload is a simple first step toward increasing job satisfaction. *Changing the workplace* had a positive effect on the mindfulness group regarding their experiences of workload. When changing the workplace after the mindfulness intervention, their experiences of workload decreased significantly. The control group however experienced the same amount of workload even when changing the workplace. This again shows how mindfulness practices can comprehensively change how we behave and perceive our environment. Furthermore mindfulness allows identifying unhealthy behaviors and helps detach from them, thus encouraging to healthier options (Fortney et al., 2013). Therefore it might also be that the participants of the mindfulness intervention, who changed their workplace, were more eager to downshift to improve their health and change to a less stressful workplace with a minor workload.

Experiences of *job control* increased for both study groups as well. It is assumable that when taking responsibility over one's own health, a sense of control may extend to other domains in life as well. When the participants decided to take part in the mindfulness intervention study, they were taking responsibility over their health and thus a sense of control may have increased and extended to their experiences of *job control*. As mentioned earlier, work and non-work areas in life are connected and experiences on either domain reflect on the other (Reichl, Leiter, & Spinach, 2014).

4.2 Limitations and Future Suggestions

This study was conducted on a longitudinal basis with three different measurement points, which makes examining changes highly reliable. However the period frame was fairly short and studies with longer time lags are necessary to examine the effects of mindfulness practices thoroughly. Despite the large sample and the wide range of different occupations, the sample faces some limitations as well. Generalization might be limited by the fact that participants who applied for the study may find mindfulness more appealing than their peers, and thus find it more helpful. In

addition the majority of women might limit the generalization on male population. No gender differences were found in this study, but it would be interesting to further investigate differences between males and females regarding the effectiveness of mindfulness in changing experiences of job characteristics. Furthermore the participants were part of the most burnout workers in Finland and it would be interesting to investigate how mindfulness works as prevention on less burnout people.

A longitudinal setting with longer time frames is needed to shed light on how long lasting the positive effects of practicing mindfulness are and what other effects it may have on participant's life. Furthermore more research on the effectiveness of mindfulness in protecting from difficult events in life is needed as well. It is also necessary to study if the participants who dropped out have common reasons for leaving the study and how can the mindfulness practices be changed to better accommodate the participants who feel mindfulness does not suit them well.

4.3 Conclusions

This study contributes essentially to the investigation on the effects of mindfulness on experienced job characteristics and gives valuable knowledge on the relationship between mindfulness and job satisfaction. As previous studies have shown, mindfulness based interventions are effective in increasing job satisfaction among employees. Mindfulness practice targets many of the core processes underlying experiences of job characteristics. It increases awareness in the present moment, changes one's attitude and helps recognize and disengage from automatic and unhelpful thoughts and behaviour. Furthermore this study shed light on the potential of mindfulness in protecting from difficult events in life.

This study confirmed findings of previous studies on the effects of mindfulness: experiences of job satisfaction and clarity of the mindfulness intervention group increased significantly compared to the control group. In addition background factors changed the way job characteristics were experienced, which confirmed the positive effects of mindfulness as well. Further longitudinal investigations are needed to examine the effects of mindfulness in the long run and to confirm the effects of background factors on experienced job characteristics. Findings on the effectiveness of mindfulness suggest that mindfulness should be considered in occupational health care as an equal, or even better, method among other legitimate means in increasing job satisfaction and other job characteristic dimensions.

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