

DIFFERENCES IN LONG-TERM INTERVENTION EFFECTS

Does a Mindfulness-, Acceptance-, and Value-Based Intervention for Burnout Have Long-Term
Effects on Different Levels of Subjective Well-Being?

Sanna M. Kinnunen, Anne Puolakanaho, Anne Mäkikangas, Asko Tolvanen, and Raimo Lappalainen

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Abstract

This study investigated whether beneficial intervention effects on burnout and mindfulness skills diffuse and facilitate the long-term development of different levels of subjective well-being: experiential (perceived stress), eudaimonic (psychological and social well-being), and evaluative (life satisfaction). Participants were Finnish employees with notable burnout ($n = 105$, 80 % women). The study utilized individual profiles of burnout and mindfulness skills identified in a previous study (Kinnunen, Puolakanaho, Tolvanen, Mäkikangas, & Lappalainen, 2018). The profiles were based on levels and changes in burnout and mindfulness skills during an 8-week intervention and 4-month follow-up. In the present study, the same profiles were compared using a chi-square test (χ^2 -test) for changes in the different levels of subjective well-being over 12-months. While most profiles showed benefits in experiential subjective well-being, achieving a significant increase in eudaimonic or evaluative levels at the 12-month study period required a considerable decrease in burnout and increase in mindfulness skills during the preceding 6-months. Those who initially benefited the most from the intervention, i.e., showed a decrease in burnout and increase in mindfulness skills, also showed the most favorable development in all three levels of subjective well-being during the 12-month study period. The differences in well-being between those who initially benefited from the intervention and those who did not seemed unlikely to diminish over time. It is thus important to monitor intervention effects on each level of subjective well-being to identify participants who are likely to need additional support to achieve long-term changes in well-being in all levels.

Keywords: mindfulness, acceptance, burnout, subjective well-being

Does a Mindfulness-, Acceptance-, and Value-Based Intervention for Burnout Have Long-Term Effects on Different Levels of Subjective Well-Being?

Mindfulness-, acceptance-, and value-based (henceforth MAV) interventions aimed at decreasing stress and burnout and promoting well-being have shown promising results (Khoury, Sharma, Rush, & Fournier, 2015; Lloyd, Bond, & Flaxman, 2013; Reeve, Tickle, & Moghaddam, 2018). The theoretical model for the changes induced by MAV interventions and applied in this paper is the Acceptance and Commitment Therapy model (ACT; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes, Pistorello, & Levin, 2012). The ACT model can be understood as a hexaflex containing six processes: (a) purposefully remaining in the present moment; (b) having a perspective-taking attitude on thoughts and feelings; (c) clarifying values in life; (d) performing actions in accordance with the identified values; (e) accepting the unpleasant feelings that arise when performing value-based actions; and (f) increasing one's defusion skills, such as seeing interfering thoughts as thoughts rather than literal truths (Hayes et al., 2012). Each of these processes represent a psychological skill that can be enhanced in any life domain. Therefore, MAV interventions can be viewed as trans-diagnostic treatments that have positive effects on multiple well-being issues and psychological symptoms (Dindo, Van Liew, & Arch, 2017; Hayes & Hofman, 2017), as is also suggested by the burnout studies of Puolakanaho, Tolvanen, Kinnunen, and Lappalainen (2018) and Vilardaga et al. (2011).

Subjective well-being can be conceptualized as a combination of three levels, i.e. evaluative, eudaimonic, and experiential, each of which can be defined and measured (Deaton & Stone, 2016). Evaluative well-being refers to the broad experience of overall life satisfaction; eudaimonic well-being to experiences of life as having meaning and purpose; and experiential well-being to everyday experiences, such as joy or pain. In this study on the effects of a MAV intervention for burnout on subjective well-being, these three levels are studied separately. Here, the evaluative level of well-being

is described by life satisfaction. The eudaimonic level of well-being is described by two constructs, namely psychological well-being (thriving in personal life) and social well-being (thriving in social life) (Keyes, Smothkin, & Ryff, 2002; Ryff, 1998). The experiential level of well-being is represented by perceived stress, as it describes short-term stress in life and hence everyday experiences of well-being. Subjective well-being has been shown to be closely intertwined with work well-being (Reichl, Leiter, & Spinath, 2014), further indicating that changes in burnout could be associated with changes in well-being. However, these associations have not previously been studied, as in this study, in the context of an intervention with a long-term follow-up.

This study thus yields novel information on whether a MAV intervention can alleviate burnout and enhance mindfulness skills, and thereby diffuse and facilitate the long-term favourable development of subjective well-being. The present study utilizes the profiles identified by Kinnunen, Puolakanaho, Tolvanen, Mäkikangas, and Lappalainen (2018) on the basis of changes in the levels of burnout and mindfulness skills during a 6-month period. The profiles are presented in the Method section and illustrated in Figure 1. This study hypothesized that the profiles with the largest positive changes in burnout and mindfulness skills during the 6-month period would also show the largest increases in experiential, eudaimonic, and evaluative well-being during the 12-month period.

Method

Participants

The participants were a subset of a sample collected for project XXX, funded by XXX and registered to ClinicalTrials.gov. The project was a randomized clinical trial designed to investigate if a mindfulness-, acceptance-, and value-based intervention can alleviate burnout and promote well-being (for details, see XXX). The research design was approved by the ethical committee of the local health care district. The participants were recruited via newspaper, web announcements, and employee health

care. Recruitment was implemented via a webpage, and all persons interested were interviewed. The inclusion criteria were: age between 25 and 60, currently employed, daily access to the Internet, membership of the most exhausted employee group according to the cutoff score of Bergen Burnout Indicator (75th percentile; Näätänen, Aro, Matthiesen, & Salmela-Aro, 2003). Persons having regular psychotherapy or reporting major pharmaceutical changes, or psychological or somatic conditions were excluded.

Data were collected via personalized web questionnaires at four measurement points: before the intervention (pre), after the intervention (post, 8 weeks after pre), four months after the post-measurement (f-up4), and ten months after the post-measurement (f-up10). The final study sample ($n = 105$) composed the MAV group participants who answered both the pre- and post-measurement questionnaires. The majority (80%) were women. Mean participant age was 47.8 (SD = 7.78), and most participants were relatively highly educated (69% had a polytechnic or university degree). None of the participants had practiced mindfulness regularly prior to the intervention (for details of the sample, see Kinnunen et al., 2018).

Six Distinctive Profiles of Burnout and Mindfulness Skills

Kinnunen et al. (2018), using Latent Profile Analysis, identified six profiles based on levels and changes of burnout and mindfulness skills. The profiles are presented in Figure 1. Beneficial changes with medium to large effect sizes were detected for 59.5% of the participants (Profiles 1, 3, 5, and 6) in burnout and for 88.5% (Profiles 1, 2, 3, 5, and 6) in mindfulness skills. Profile 4 did not show any beneficial changes.

Intervention

The intervention is a mindfulness-based program that follows the guidelines given in Williams and Penman (2011). In addition, value-based elements of Acceptance and Commitment Therapy

(Hayes et al., 2012; Lappalainen et al., 2009) were added to this program. The 8-week intervention made joint use of both group meetings and Internet material with the aims of increasing mindfulness and acceptance skills and clarifying personal values. Participants were instructed to do formal mindfulness exercises (e.g., body scan, breathing meditation) twice a day for six days a week. Informal exercises (e.g., doing chores mindfully) and value-based actions also formed part of the weekly program (for details, see Kinnunen et al., 2018).

Measures

Burnout was measured with the Bergen Burnout Indicator (Näätänen et al., 2003) and mindfulness skills with the Five-Facet Mindfulness Questionnaire (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Cronbach's alphas for the pre-, post- and fup4 were .78, .90, and .92 for burnout and .91, .92, and .93 for mindfulness skills (for details, see Kinnunen et al., 2018).

Changes in subjective well-being were measured as changes in scores from the pre- to f-up10 measurement. The 10-item version of the Perceived Stress Scale (Cohen, Kamaric, & Mermelstein, 1983) was used to measure perceived stress. The measure comprises ten questions on the frequency of stressful feelings and thoughts during the past month (e.g., "In the last month, how often have you been upset because of something that happened unexpectedly?"), each assessed on a 5-point scale (from 1 = never to 5 = very often). Cronbach's alphas for the pre- and fup10 measurements were .85 and .87.

Psychological well-being was assessed with an abbreviated version of the Ryff Scales of Psychological Well-Being (Ryff, 1989). Eighteen items assessed self-acceptance, autonomy and environmental mastery (e.g., "When I look at the story of my life, I am pleased with how things have turned out."). The scale ranged from 1 (= strongly disagree) to 4 (= strongly agree). Cronbach's alphas for the pre- and fup10 measurements were .64 and .74.

Social well-being was measured with the Scales of Social Well-Being (Keyes et al., 2002). Fifteen items assessed social situations and relationships (e.g., “I don't feel I belong to anything I'd call a community.”) on a 4-point scale (from 1 = strongly disagree to 4 = strongly agree). Cronbach's alphas for the pre- and fup10 measurements were .72 and .81.

The Life Satisfaction Questionnaire (Pulkkinen, Feldt, & Kokko, 2005) was used to assess satisfaction in seven life domains: housing, financial situation, choice of occupation, present occupational situation, present intimate relationship or lack of it, content of leisure time, and present friendly relations. The scale ranged from 1 (= very dissatisfied) to 4 (= very satisfied). Cronbach's alphas for the pre- and fup10 measurements were .52 and .70.

Statistical Analysis

Effect sizes were calculated for the changes in subjective well-being. The within-group effect size was calculated by dividing the mean change from pre- to f-up10 by the combined standard deviation of the pre- and f-up10 values $[(m_{\text{post}} - m_{\text{pre}})/\sqrt{((v_{\text{pre}} + v_{\text{f-up10}})/2)}]$ in the whole sample (Morris & DeShon, 2002). This effect size measure is comparable to Cohen's d , where .20 indicates a small effect size, .50 a medium effect size, and .80 a large effect size (Cohen, 1992). The statistical significance of the effect sizes was evaluated based on the t -distribution.

Because class membership in the profile solution is used as an observed variable, uncertainty in the classification can produce distorted estimates and standard errors. Therefore, the six profiles were compared on changes in well-being by testing the equality of the means of changes between the profiles using a chi-square test (χ^2 -test) with posterior probability-based multiple imputations (Muthén & Muthén, 1998-2012). Uncertainty was accounted for by using posterior probabilities, for which a χ^2 -test is a robust method. The analyses were performed with Mplus 7 (Muthén & Muthén, 1998-2012). Preliminary analyses were performed using SPSS Statistics 22.

Results

The means, standard deviations, and correlation matrix (Spearman's correlations) of the study variables are presented in Table 1. For each profile, the amounts of change with effect sizes, and the differences between the profiles in changes in the well-being measures are presented in Table 2. Overall, it appeared that the profiles showing the largest positive changes in burnout and mindfulness skills during the 6-month period also showed the largest positive changes in all three levels of subjective well-being during the 12-month study period. Specifically, Profiles 1 and 2 showed similar positive changes in each level of subjective well-being during the 12-month study period, although Profile 1 showed a larger decrease in burnout than Profile 2 but a similar increase in mindfulness skills during the 6-month period. The changes in each level of subjective well-being in Profile 3 were similar to those in Profiles 1 and 2 although significant effect sizes were found only for the decrease in perceived stress and increase in life satisfaction. Profile 4 did not show positive changes in any of the levels of subjective well-being while Profile 5 showed notable positive changes in all the measures. In Profiles 4 and 5, the change trends in the levels of subjective well-being during the 12-month study period were comparable to those found for burnout and mindfulness skills during the 6-month period. In Profiles 5 and 6, the most pronounced changes occurred in the experiential level of well-being. The changes in eudaimonic and evaluative well-being were less prominent in Profile 6 than Profile 5. During the 6-month period, Profile 6 showed lower levels of change in burnout and mindfulness skills than Profile 5.

Discussion

This study yielded novel and detailed knowledge on the long-term development of different levels of subjective well-being (experiential, eudaimonic and evaluative) within and between the six earlier identified burnout-mindfulness profiles. In general, the present short MAV intervention for

burnout induced long-term improvements in subjective well-being. However, the profiles differed in the development of well-being. While most of the profiles showed benefits in experiential well-being, an increase in eudaimonic or evaluative well-being during the 12-month period was evident only in the profiles showing the largest decrease in burnout and largest increase in mindfulness skills during the 6-month period (changes with large effect sizes; see Kinnunen et al., 2018).

When the differences in subjective well-being development are considered against the ACT model (Hayes et al., 2006, 2012), it is highly plausible that to enhance subjective well-being requires that improvements in core psychological skills. The experiential level depicts everyday fluctuations in well-being (Deaton & Stone, 2016) and thus may be more prone to change. It is possible that completion of the prescribed exercises alone is enough to bring about improvement in individual's experiential well-being on a given day. A profounder understanding of the requisite psychological skills might be needed to improve the eudaimonic and evaluative levels, as these describe more stable experiences of meaningfulness and satisfaction in life. Furthermore, improvements in the experiential level could be interpreted as transitioning a person from ill-being to a neutral state, whereas improvements in the eudaimonic and evaluative levels represent positive well-being experiences that extend beyond the absence of ill-being. Changes in the experiential level could thus be essential for changes in the other levels.

The first practical implication of this study is that, when implementing MAV interventions, it is essential that the effects on well-being are evaluated broadly across the different levels. While it is plausible that the experiential level of subjective well-being, here measured as perceived stress, could be affected by superficial learning of the psychological skills represented in the ACT model, to achieve changes in psychological and social well-being (eudaimonic level), as well as in life satisfaction (evaluative level), more attention should be devoted to gaining a thorough understanding of how to lead

a value-based life and avoid entanglement with inner experiences during the process. Another practical implication concerns participants with poor initial outcomes. The results indicated that the differences in well-being between the outcome profiles seemed unlikely to diminish over time, as those who showed the most favorable results over the 6-month period also showed the most favorable development in subjective well-being over the 12-month period (Profiles 1 and 5) and vice versa (Profiles 3 and 4). Those who achieved good initial results were likely to experience benefits in all three levels of subjective well-being, while those who did not initially benefit may need further support to avoid increasing the gap in well-being between the different profiles.

One of the limitations of this study was that its results are based on self-report data and are thus vulnerable to common method bias. The correlations between burnout, mindfulness skills and levels of subjective well-being were small to medium ($\pm .07-.51$), indicating that the constructs represented separate dimensions of well-being, rather than measurement error compounded by social desirability bias. The sample size was relatively small, and the generalizability of the results is restricted as the sample consisted mainly of highly educated women.

Conclusion. Most of the profiles showed benefits in the experiential level of subjective well-being. However, to achieve a significant increase in the eudaimonic or evaluative levels during the 12-month study period, both the decrease in burnout and increase in mindfulness skills needed to be considerable during the 6-month period. In addition, the well-being differences between the profiles seem unlikely to diminish over time. In practice, to obtain a broad picture of the effects of a MAV intervention and to prevent an increase in the gap in well-being between the different outcome profiles, it is important to monitor intervention effects across several levels of well-being.

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Table 1

Means, Standard Deviations, and Correlations of the Study Variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1 Burnout pre	3.20	0.54										
2 Burnout post	2.61	0.75	.51**									
3 Burnout f-up4	2.48	0.84	.43**	.73**								
4 Mindfulness pre	3.18	0.46	-.36**	-.01	-.07							
5 Mindfulness post	3.56	0.41	-.11	-.31**	-.33**	.37**						
6 Mindfulness f-up4	3.60	0.46	-.08	-.31**	-.49**	.51**	.72**					
7 Perceived stress change	-0.57	0.58	-.15	.31**	.42**	.12	-.34**	-.40**				
8 Psych. well-being change	0.15	0.32	.12	-.22*	-.31**	-.24*	.23*	.20*	-.39**			
9 Social well-being change	0.19	0.34	.09	-.32**	-.35**	-.07	.22*	.28**	-.51**	.51**		
10 Life satisfaction change	0.21	0.34	-.08	-.30**	-.27**	-.16	.07	.10	-.39**	.32**	.40**	

Note. Change refers to change from pre- to f-up10 measurement (8-week intervention and 10-month follow-up).

Responses that were more than three standard deviations from the sample mean were relocated to the tail of the variable distribution.

$N = 95-105$.

** $p < .01$. * $p < .05$.

Table 2

Means, Standard Errors and Effect Sizes of Changes in Subjective Well-Being for the Profiles and χ^2 -Test Results during the 12-Month Study Period

Profile	1 (30.1%)	2 (29.0%)	3 (12.1%)	4 (11.5%)	5 (9.5%)	6 (7.8%)	Test scores	
Measure	M (S.E.) <i>d</i>	M (S.E.) <i>d</i>	M (S.E.) <i>d</i>	M (S.E.) <i>d</i>	M (S.E.) <i>d</i>	M (S.E.) <i>d</i>	Overall $\chi^2(p)$	Pairwise comparisons
<i>Experiential level</i>								
Perceived stress change	0.69 (0.12) 1.23*	0.50 (0.09) 0.89*	0.32 (0.09) 0.57*	0.14 (0.15) 0.25	1.30 (0.14) 2.33*	0.48 (0.15) 0.85*	50.36 (.00)	1, 2, 3, 4, 6 < 5 3, 4 < 1 4 < 2
<i>Eudaimonic level</i>								
Psychological well-being change	0.16 (0.07) 0.47*	0.14 (0.06) 0.42*	0.20 (0.10) 0.59	-0.05 (0.11) - 0.16	0.42 (0.04) 1.24*	0.10 (0.09) 0.28	36.50 (.00)	1, 2, 3, 4, 6 < 5
Social well-being change	0.21 (0.07) 0.55*	0.15 (0.06) 0.40*	0.15 (0.10) 0.39	-0.02 (0.06) - 0.04	0.52 (0.12) 1.41*	0.22 (0.09) 0.60*	18.35 (.00)	1, 2, 3, 4, 6 < 5 4 < 1, 6
<i>Evaluative level</i>								
Life satisfaction change	0.33 (0.06) 0.84*	0.21 (0.07) 0.53*	0.17 (0.08) 0.43*	0.00 (0.10) 0.00	0.33 (0.13) 0.83*	-0.01 (0.08) -0.02	16.13 (.01)	4, 6 < 1, 5 6 < 2

Note. Change refers to change from pre- to f-up10 measurement (8-week intervention and 10-month follow-up). Change scores for perceived stress have reversed so that higher scores indicate larger positive change, as in other measures. Responses that were more than three standard deviations from the sample mean were relocated to the tail of the variable distribution.

Effect sizes (*d*): Asterisks indicate that the effect size is significant based on the *t*-distribution.

d > .20 small effect. *d* > .50 medium effect. *d* > .80 large effect.

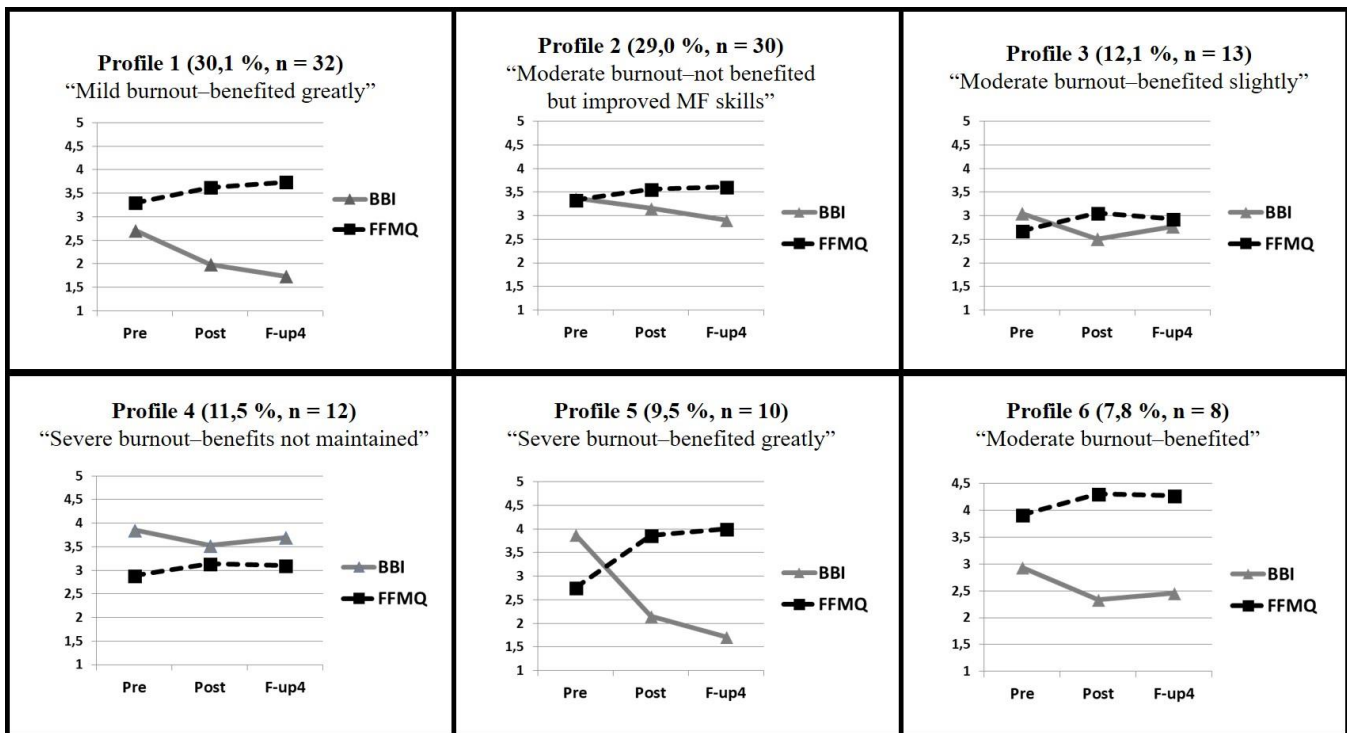


Figure 1. Latent profiles of burnout and mindfulness skills during the 6-month study period (8-week intervention and 4-month follow-up; n = 105)