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Leader’s Empathic Listening
– The Effect of a Short-Term Mindfulness Intervention

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Table of Contents

Abstract	3
Introduction	4
Theory and hypotheses	6
Mindfulness	6
Active and empathic listening	7
Self-Reflection.....	9
Fatigue	9
Method	11
Sample	11
Design and procedure	12
The mindfulness intervention	12
Measures	13
Results	15
Testing of Hypotheses	17
Discussion	23
Limitation and future directions	26
Theoretical and practical implications.....	28
Conclusion	29
References	30
Appendices	37

Abstract

Recent leadership theories already have drawn the connection between mindfulness and successful leadership. Leaders presumably can benefit from the positive influence of mindfulness exercises on various important abilities. In contrast to these theoretical findings, the direct influence of mindfulness interventions on leaders has not yet been empirically investigated. To fill this research gap, this study examines the connection between a short-term mindfulness intervention and important abilities for today’s leaders (i.e., state mindfulness, active and empathic listening, self-reflection) as well as their fatigue levels. A field, intervention study was conducted testing a model in which state mindfulness functions as a mediator for the relationships between the mindfulness intervention and the other outcome variables. The sample consisted of 82 leaders from a large Swiss medical corporation – divided into an experimental group ($N=53$) and a control group ($N=29$). Multiple sources (i.e., self-report, peer-ratings and expert-ratings) were included. No effects of the short-term mindfulness intervention on leaders’ state mindfulness and self-reflection were found. However, results supported the positive effect of the mindfulness intervention on leaders’ empathic listening behavior and revealed a significant effect on leaders’ fatigue levels. These findings indicate that leaders not only can physically benefit from a short-term time investment in mindfulness exercises but also that it can lead to directly observable behavioral changes.

Keywords: mindfulness, intervention study, fatigue, peer-rating, expert-rating, leadership, active listening, empathic listening, self-reflection

Introduction

When you talk, you are only repeating what you already know. But if you listen, you may learn something new. – Buddha

During the last centuries, the world has developed dramatically which increased the pressure that people are facing at work as well as the necessity for them to adapt quickly (Maynard, Kennedy, & Sommer, 2015). Simultaneously, the focus on the ability to be present in the moment and to be aware of oneself increased as being able to do so empowers one to successfully deal with the current fast-paced international work environment and engage in the world more actively (Reid, 2011). Consequently, a practice which effectively targets such abilities became increasingly popular: *mindfulness* – an “approach to developing new kinds of control and wisdom in our lives, based on our inner capacities for relaxation, paying attention, awareness, and insight” (Kabat-Zinn, 1990, p.2). Aiming to strengthen this practice, the Mindfulness Based Stress Reduction (MBSR) program was implemented in 1990 (Kabat-Zinn, 1990). Afterwards, multiple personal and interpersonal gains connected to practicing mindfulness were uncovered (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007; Goldin & Gross, 2010; Grossman, Niemann, Schmidt, & Walach, 2004; Nyklíček & Kuijpers, 2008) and recently, also the corporate world has begun to focus on mindfulness as a tool to increase presence and well-being in the work place. Many important global players (e.g., Google, Aetna, General Mills, and Intel) have already effectively implemented mindfulness practices into their working environments, routines and organizational philosophy (Schaufenbuel, 2015; Schwalbach, 2016b).

In the corporate world, leaders are particularly important players. Their behavior has a vast impact on the whole organization because they act as role models, interact with and thus influence the entire organization (Ilies, Nahrgang, & Morgeson, 2007; Koene, Vogelaar, & Soeters, 2002; Kuoppala, Lamminpää, Liira, & Vainio, 2008). Leaders’ daily multidimensional challenges cannot be mastered without the ability to “slow down, reflect, and collaborate before taking action” (Alexander, 2006, p. 88). Thus, it can be particularly beneficial for leaders to engage in mindfulness exercises to increase their self-awareness and their ability to be present and approach every situation with a fresh, unbiased mind. Additionally, other abilities that are considered increasingly important in today’s leadership context presumably can be specifically addressed by mindfulness exercises. This study will focus on the effect of mindfulness exercises on the development of these abilities.

First, one of the most significant features that distinguishes average from excellent leaders is a leader’s ability to communicate effectively (Harrison & Mulhberg, 2014). The overall quality of the organization’s leadership is particularly affected by its leaders’ communication behavior as the broad variety of leadership responsibilities require excellent communication skills (Harrison & Mulhberg, 2014; Wolvin, 2005). Specifically, an essential aspect is the leaders’ listening ability, which is seen as the pivotal skill to master conflicts and uncertainties and also represents one of the central activities for leaders as they spend half of their time listening (Harrison & Mulhberg, 2014). Thus, focusing on the improvement of leaders’ listening abilities is pivotal for successful leadership.

Second, empathy has been identified as crucial ability for today’s leaders (Peters, 2015; Taylor, 1999). It is essential because the ability to actively display one’s own emotions as well as detect other’s emotions lead to a leader’s improved overall performance (Sadri, Weber, & Gentry, 2011). As Henry Ford once said: “If there is any one secret of success, it lies in the ability to get the other person’s point of view and see things from the person’s angle as well as from your own” (cf., Riordan, 2014, p. 1). Also, empathy is strongly connected to listening. The combination of empathy and active listening represents a particularly effective form of listening because it enables people to put themselves into another person’s shoes and it increases the ability to relate to different perspectives (Riordan, 2014). Recently, research uncovered the impact of the combination of these two crucial factors for successful leadership and for reaching an advanced listening ability (Comer & Drollinger, 1999; Drollinger, Comer, & Warrington, 2006).

The third pivotal capacity for mastering leadership responsibilities in today’s challenging environment is the ability to self-reflect (Arnold, 2014; Frey, 2015). A leader’s ability to self-reflect is predicted to be essential for organizational effectiveness by improving the impartiality for different perspectives and take several different opinions and viewpoints into account as well as treat those equally instead of narrow-mindedly prioritizing one’s own ideas (Schwalbach, 2016b). As the process of self-reflection not only includes self-awareness but also the understanding of other perspectives and their interplay with one’s own perceptions, this ability also is strongly related to empathy (Ispaylar, 2016).

Furthermore, the three values – mindfulness, empathy and self-reflection – are particularly important for successful interpersonal interaction and recent leadership literature has identified the interplay of the aforementioned abilities as crucial for leadership effectiveness (Frey, 2015; Scharmer, 2009). Only recently, this theoretical knowledge was used for deriving practical recommendations for how to develop these important leadership

skills and cultivate a successful leadership style (Schwalbach, 2016a). Hereby, mindfulness exercises represent the key element by enabling “the practitioner to be fully aware of the processes that constitute his/ her experience from moment to moment and condition his/ her individual self- and world view” (Virtbauer, 2016, p. 75). Moreover, the awareness of the importance of a mindful leadership style has consistently increased throughout the last few years. Scholars as well as CEOs have identified the benefits resulting from practicing mindfulness (George, 2012; Sethi, 2009) and many positive effects of leaders’ mindfulness on different outcome variables were uncovered (e.g., well-being, performance, satisfaction) (Reb, Narayanan, & Chaturvedi, 2014; Roche, Haar, & Luthans, 2014).

Hence, the academic world has already recognized the importance of leaders’ ability to empathize, listen and self-reflect and has also identified mindfulness as a technique for improving these abilities. Surprisingly, empirical research has yet to connect these findings in the field of leadership and apply them in order to directly and specifically train leaders by use of a mindfulness intervention. Our study contributes to the existing literature in three important ways: First, it addresses the existing research gap. Second, it identifies currently essential leadership abilities and third, it already proposes and tests a technique for developing these. Following, the theory and hypotheses as well as the method are outlined. Next, results are presented and discussed and a conclusion is drawn.

Theory and hypotheses

Mindfulness

Mindfulness is a form of meditation which originates in Buddhism. The name is a literal translation inferred from the Buddhist word *sati*, which also means “intentness of mind”, “wakefulness of mind” and “lucidity of mind” (Davids & Stede, 1921, p. 745). In the context of the present study it is defined as “receptive attention to and awareness of present events and experience” (Brown, Ryan, & Creswell, 2007, p. 212; Good et al., 2015, p. 4).

Mindfulness interventions were first implemented in the medical sector. Many studies discovered positive effects of mindfulness on subjective psychological well-being, brain functioning and numerous other variables (Brown & Ryan, 2003; Davidson et al., 2003; Eberth & Sedlmeier, 2012; Farb et al., 2007; Gard et al., 2012; Hölzel et al., 2007; Teasdale et al., 2000; Williams, 2008). In the field of Industrial and Organizational Psychology, researchers have found positive effects of mindfulness interventions on important variables for effective human functioning in the working context, involving coping with stress; attentional stability, control, and efficiency; and cognitive capacity and flexibility (Good et

al., 2015). Moreover, consequences regarding reduced reactivity to emotional stimuli and positive behavioral changes in terms of improved self-regulation ability and reduced automaticity were discovered (Glomb, Duffy, Bono, & Yang, 2011; Kieviet-Stijnen, Visser, Garssen, & Hudig, 2008; Pipe et al., 2009). Additionally, research revealed positive effects of mindfulness interventions on employee outcome variables like job satisfaction, sleep quality and duration and psychological detachment as well as a negative effect on emotional exhaustion (Hülshager, Alberts, Feinholdt, & Lang, 2012; Hülshager et al., 2014; Hülshager, Feinholdt, & Nübold, 2015). However, regarding the direct influence of mindfulness interventions on leaders, little research has been done to date. Solely an indirect positive effect of a mindfulness intervention on leadership efficiency through the improvement of the self-regulation capabilities had been discovered (Hannah, Woolfolk, & Lord, 2009).

Mindfulness can be operationalized in different ways (i.e., trait or state). On the one hand, the concept of mindfulness as a trait assumes that individuals differ due to complex combinations and interactions of genetic predispositions and environmental influences in their dispositional quality of mindfulness (Brown & Ryan, 2003). On the other hand, mindfulness can be operationalized as a state. This perspective assumes that trainings and interventions (short-term and long-term) can influence participants’ mindfulness level in that it is defined as situational and malleable (Kabat-Zinn, 1982).

All mindfulness interventions initially aim at improving the degree of the participants’ situational mindfulness level (i.e., state mindfulness), hoping to raise levels of trait mindfulness on the long run. The effects of a high degree of leaders’ trait mindfulness for improving their effectiveness, reducing anxiety, depression, negative affect and burnout and increasing various facets of their employees’ well-being (e.g., job and need satisfaction, employee performance, organizational citizenship behavior) have already been evidenced (Reb et al., 2014; Roche et al., 2014). As the present mindfulness intervention primarily aims at improving the participants’ momentary mindfulness level, we expect that the intervention will have a positive effect on leaders’ degree of state mindfulness.

Hypothesis 1: The mindfulness intervention will increase leaders’ state mindfulness.

Active and empathic listening

One of the most important skills for leaders to master challenging situations in their complex environments is *social sensitivity* which was originally captured under the term *leader empathy*. It is defined as the ability to interpret the verbal communication of others, understand social situations, roles, and norms and is demonstrated by leaders’ effective and

active listening behavior (Riggio & Reichard, 2008). A very important duty of a leader is to effectively communicate with different parties as “at the heart of good communication is effective listening” (Drollinger et al., 2006, p.162). Moreover, good listening skills are essential for ideal performance concerning all aspects of business (Harrison & Mulhberg, 2014) and poor quality of leaders’ communication has shown negative effects for example on their followers (Theorell et al., 2012). Thus, leaders should possess good empathic listening skills in order to successfully fulfill their responsibilities.

Mindfulness interventions foster communication competences in that they improve person-centered communication patterns and raise the positive emotional tone during conversations (Beach et al., 2013) as well as lead to better communication behavior during discussions (Barnes et al., 2007). Furthermore, research uncovered a positive effect of mindfulness interventions on communication skills as they lead to an increased ability for listening openly and deeply and also result in an improved empathy level (Beckman et al., 2012). Those conclusions were further supported by research findings of a positive influence of mindfulness interventions on the ability to communicate one’s emotions and an increased level of skilled empathic responding abilities (Wachs & Cordova, 2007). The impact of such interventions on the overall empathy-level was also further evidenced by several studies (Beitel, Ferrer, & Cecero, 2005; Birnie, Speca, & Carlson, 2010; Dekeyser, Raes, Leijssen, Leysen, & Dewulf, 2008; Shapiro, Schwartz, & Bonner, 1998; Trent, Park, Bercovitz, & Chapman, 2016). Thus, we hypothesize that the mindfulness intervention will improve leaders’ active and empathic listening.

Also, an improved state mindfulness level impacts interpersonal interactions and the quality of both dyadic and team relationships by allowing individuals to fully focus on their communication partner and to listen actively and empathically (Good et al., 2015). Therefore, we expect that the effect of the intervention on leaders’ listening will be mediated by leaders’ state mindfulness.

Hypothesis 2: The mindfulness intervention will increase leaders’ active listening.

Hypothesis 3: The mindfulness intervention will increase leaders’ empathic listening.

Hypothesis 4: The effect of the mindfulness intervention on leaders’

- a) active listening and
- b) empathic listening

will be mediated by leaders’ state mindfulness.

Self-Reflection

The best way for mastering complex and instable situations is by identifying multiple opportunities for action (Greve, Freytag, & Katterbach, 2016). This can be achieved via gaining a deeper self-insight through self-reflection which represents “those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations” (Boud, Keogh, & Walker, 2013, p. 19). Self-reflection not only leads to the recognition of discrepancies in oneself, but it also results in people’s motivation to change (Greif, 2007), which is an obligatory requirement for successfully adapting to a constantly changing environment. Therefore, self-reflection is an essential ability for leaders in today’s organizations.

Recently, a direct theoretical connection between self-reflection and mindfulness has been proposed (Kaschak, 2015). Self-reflection and insight support self-regulation on a meta-cognitive level (Silvia & Phillips, 2011). Simultaneously, mindfulness leads to an improved self-control by increasing the awareness of routine behaviors and automatic actions providing greater autonomy over the decision for future action (i.e., permission of the automatic reaction or shift to a conscious regulation of the behavior) (Good et al., 2015; Tang, Tang, & Posner, 2013). Additionally, mindfulness interventions are beneficial for the ability to self-reflect by fostering self-awareness to appraise one’s own reactions and improving the ability to identify and describe one’s feelings (Beckman et al., 2012; Dekeyser et al., 2008).

Hence, we expect that leaders’ level of self-reflection will increase as a result of the mindfulness intervention. Moreover, being able to completely focus on the present moment puts current thoughts at the heart of attention. Thus, we expect that the relationship between the intervention and leaders’ ability for self-reflection will be mediated by leaders’ state mindfulness.

Hypothesis 5: The mindfulness intervention will increase leaders’ self-reflection ability.

Hypothesis 6: The effect of the mindfulness intervention on leaders’ self-reflection ability will be mediated by leaders’ state mindfulness.

Fatigue

The need for recovery and the fatigue level at the end of the working day are important variables indicating occupational health because these represent physical effects of serious experiences of stress (Colligan & Higgins, 2005). Hence, especially leaders who are exposed

to a lot of stress are in danger of feeling tired, unbalanced and unrecovered. Additionally, a high fatigue level in the workplace potentially leads to negative impacts on safety, health, and productivity (Lerman et al., 2012). At the leadership level, this can cause severe problems because – by definition – the decisions and actions leaders must undertake often affect many different parties and people.

Furthermore, a constantly high fatigue level can seriously threaten the physical and psychological health by resulting in Chronic Fatigue Syndrome (CFS). As a consequence of this syndrome patients suffer not only regarding their physical functioning but also concerning their identity and role in life (Surawy, Roberts, & Silver, 2005). One consequence of this illness is that patients are caught up in a vicious cycle of trying to regain control over these symptoms and raising their activity level. This leads them to either engage in “over-activity followed by excessive rest, or a gradual avoidance of activity accompanied by decreased levels of fitness, poor sleep and general bodily dysregulation and associated symptoms” (Surawy, Roberts, & Silver, 2005, p.103-104).

Research findings support a positive effect of a combination of cognitive behavioral approaches and practical exercises for successfully treating CFS (Deale, Chalder, Marks, & Wessely, 1997). Similar to this approach, mindfulness interventions mitigate the factors that characterize CFS because they help to overcome the vicious cycle by enabling the patients to regain their mental control. Previous study findings already showed a sustainable effect of the intervention on the patients’ fatigue levels (Surawy, Roberts, & Silver, 2005). Moreover, research has identified a positive and sustainable effect of mindfulness interventions on participants’ preliminary stages of CFS (i.e., exhaustion and general fatigue) (Carlson & Garland, 2005; Hülshager et al., 2014, 2012). Consequently, we hypothesize that this study’s intervention will lead to a decreased fatigue level for the participants.

Additionally, the vicious cycle of negative thoughts causing severe fatigue symptoms is characterized by continuous worries about past and future. Therefore, especially being in a mindful state characterized by solely focusing on the present can help individuals to break this cycle. Thus, we expect that state mindfulness will mediate the relationship between the intervention and self-reflection. Finally, the proposed overall research model is depicted (see Figure 1).

Hypothesis 7: The mindfulness intervention will decrease leaders’ fatigue at the end of the day.

Hypothesis 8: The effect of the mindfulness intervention on leaders’ fatigue at the end of the day will be mediated by leaders’ state mindfulness.

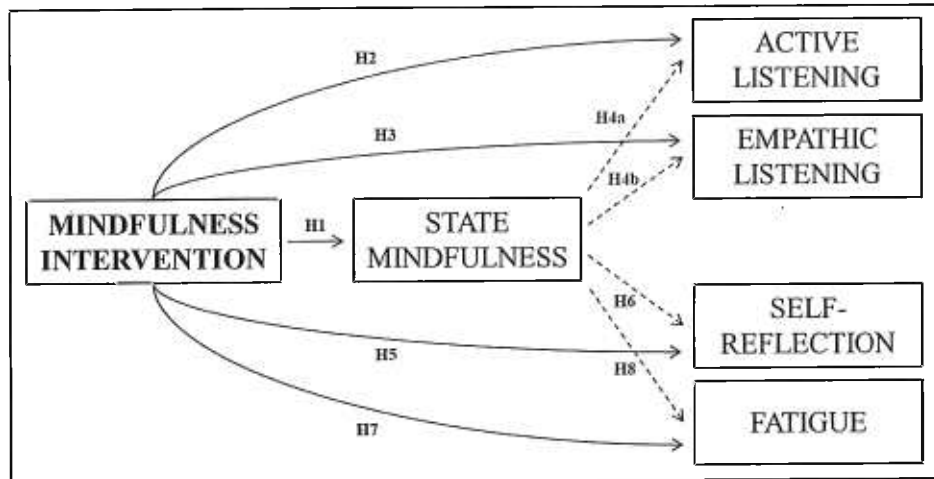


Figure 1. Hypothesized research model. The dotted grey lines indicate the hypothesized mediation effects.

Method

Sample

The data collection was conducted in cooperation with a psychological consultancy (██████████) which is specialized in leadership training and development. All participants were part of several groups attending a workshop conducted by the psychological consultancy over the duration of one and a half days. The groups were randomly assigned to the intervention or the control group condition. The workshop focused on time management, interpersonal interactions and general communication skills. For this study, six workshop groups were chosen. They consisted of 8 to 19 participants, who all held a leading position at a large private Swiss medical corporation. All participants of the workshop ($N = 82$) agreed to participate in the study, 46 were male (56.1%) and 33 were female (40.2%), three participants failed to indicate their gender. Due to a process error in the assignment of the groups to the two conditions, the control group ($N = 29$) was a lot smaller than the experimental group ($N = 53$). The participants held a variety of different leading positions at the management board of the medical corporation with various job qualifications from different sectors (e.g., medicine, business administration, hotel industry, marketing, law). The participants’ age ranged between 34 and 60 ($M = 46.15$) and – on average – they worked 51.92 hours per week ($SD = 9.11$). Overall, participants were part of the organization for eight years ($SD = 6.10$). The majority indicated a university degree as their highest education (36.6%), 17.1% did their Ph.D., 15.9% indicated advanced technical certificates and 14.6% prediploma/ bachelor’s degrees as their highest educational degree. The minority stated that a German *Hauptschulabschluss* (1.2%), A levels (1.2%) or secondary school leaving certificates (2.4%) were their highest

educational degree. Five participants said that their highest degree was not included in the previously mentioned selection (6.1%) and the rest did not answer the question (4.9%). Participants rated their jobs’ characteristics as above-average motivational ($M = 4.15$). This included work characteristics like autonomy ($M = 4.47$), task variety ($M = 4.58$), task significance ($M = 4.28$), task identity ($M = 3.67$) and feedback from the job ($M = 3.75$).

Design and procedure

The present field study was conducted as a multi-source intervention study with a control group and several assessments. Participants who were part of an intervention group received three short mindfulness exercises during the workshop while participants in the waitlist control group received all necessary information to practice mindfulness themselves after the data collection was completed. All participants received a paper-and-pencil diary booklet consisting of the introductory (baseline) survey and a total of three diary surveys for the workshop. Before the workshop started, they were asked to fill in the baseline questionnaire. Using an event sampling method, the diary surveys were answered after group discussions during the course of the workshop. Throughout this process, the different variables were assessed at different times. This will be outlined in detail later on.

The mindfulness intervention

For the intervention we used three guided mindfulness sessions of the self-training intervention developed by Hülshager et al. (2012). Two interlinked mindfulness programs built the foundation for this intervention – namely, mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982) and mindfulness-based cognitive therapy (MBCT; Morgan, 2003). Prior to the intervention itself, the construct of mindfulness was introduced to the participants of the experimental group. During the course of the workshop they then were guided through three different short-term mindfulness exercises – namely, The Body Scan, the Three-minute Breathing Space and the Mindful Routine Activity exercise.

All three exercises belong to the group of “somatically oriented, attention-focusing practices” (Dreeben, Marnberg, & Salmon, 2013, p. 394) which were first implemented as part of the Mindfulness-Based Stress Reduction (MBSR) program. This program was developed by Jon Kabat-Zinn in 1990 and combines various exercises and techniques which all aim at promoting mindfulness (Kabat-Zinn, 1990). The first exercise – The Body Scan – is one of the basic mindfulness exercises and predominantly aims at reestablishing the contact with the own body (with this technique, flexible attention (going through various body parts)

as well as stable concentration (focusing on the body and blocking out distractions) are established simultaneously). The other two exercises – the Three-minute Breathing Space and the Mindful Routine Activity – are guided breathing exercises. During the Three-minute Breathing Space, participants are guided towards establishing a meditative state and maintaining attention on their breath, simply returning to their breath when becoming distracted by thoughts or feelings. The last exercise – the Mindful Routine Activity – requests participants to imagine a person who is challenging them in their daily lives and leads them to not judge the feelings that are evoked by this but just observe them and let them pass by. All in all, the three exercises aim at promoting a non-judgmental, open-minded attention both to internal and external stimuli.

Measures

Data collection was divided into a baseline questionnaire and three situational questionnaires. The baseline questionnaire assessed demographic variables, trait mindfulness and trait self-reflection. Furthermore, participants were asked to fill in the three additional questionnaires at three different times (after group discussions had taken place) throughout the workshop. The last situational questionnaire also included a post measurement scale. All variables were assessed in German with items on a 5-point Likert (1 = *not at all*; 5 = *very much*) scale.

Mindfulness. *Trait mindfulness* was assessed in the baseline questionnaire using a German version of the 15-item (Michalak, Heidenreich, Ströhle, & Nachtigall, 2008) Mindfulness Attention and Awareness Scale (MAAS; Brown & Ryan, 2003). A sample item is: “I find it difficult to stay focused on what’s happening in the present”. For assessing *daily mindfulness* the German version (Michalak et al., 2008) of the five-item state measure of the MAAS (Brown & Ryan, 2003) was used and the items were adapted to the context of the workshop day. A reverse coded sample item is: “Today, I found it difficult to stay focused on what was happening in the present.” The participants’ *daily mindfulness* was assessed once at the end of each of the two workshop days.

Self-reflection. We assessed *trait self-reflection* in the baseline questionnaire with the German version (Greif & Berg, 2011) of the Self-Reflection and Insight Scale (SRIS; Grant, Franklin, & Langford, 2002). This scale distinguishes between three facets of self-reflection namely *engagement in self-reflection*, *need for self-reflection* and *insight*. We chose to focus on the two less stable and more state sensitive dimensions (i.e., *engagement in self-reflection*,

insight) by using the three items with the strongest factor loadings on the two factors of self-reflection (e.g., “I rarely spend time on self-reflection”; reverse coded) and insight (e.g., “I’m often confused about the way that I really feel about things”; reverse coded). Those items were assessed with the instruction how the statements *in general* fit for the participants. In contrast, for assessing *state self-reflection* in the *post measurement*, we adapted the items so that the statements referred to the behavior during the course of the workshop. For example, a reversed item for self-reflection is: “During the last two workshop days, I rarely spent time on self-reflection”.

Active empathic listening. We assessed participants’ listening behavior with two scales. Participants rated their colleagues sitting to the left and right of them for all items of the two scales. This method was chosen to reduce common method bias (Donaldson & Grant-Vallone, 2002) and rating errors (e.g., self-serving bias, halo effect) (Harris & Schaubroeck, 1988). Also, to date no study assessed the impact of a mindfulness intervention by use of observer-ratings and this study aimed to fill this gap.

First, we used the Perceived Listening Quality Scale (Lloyd, Boer, & Voelpel, 2015) which consists of seven items. The items were adapted to the workshop context by referring to the perceived listening quality of the participant’s colleagues during the last discussion that had taken place. A sample item is: “During the discussion, I had the feeling that my colleague is interested in what I have to say”.

Second, we used the German version (Lloyd et al., 2015) of the Active Empathic Listening Scale (AELS; (Drollinger et al., 2006)). It divides listening behavior into three subscales – namely, sensing, processing, and responding. We chose the two items with the strongest factor loadings on these three factors, respectively. The items were adapted to the workshop context by referring to the participants’ colleagues and the last discussion that had taken place. A sample item for sensing is: “My colleague is aware of what I imply but do not say”, a sample item for processing is: “My colleague summarizes points of agreement and disagreement when appropriate”, and a sample item for responding is: “My colleague shows me that he is listening by his body language (e.g., head nods)”.

Furthermore, for an additional reduction of common method bias and rating errors the psychologists from the consultancy who conducted the workshop rated the participants on those scales (Fay & Latham, 1982). These items were rephrased accordingly (e.g., “During the discussion, I felt that he/she is interested in what the others have to say”).

Participants as well as the psychologists were asked to fill out the active and empathic listening scales on three occasions during the workshop, all directly after group discussions had taken place.

Fatigue. We assessed fatigue twice at the end of every workshop day with the German version (Sonnentag, Binnewies, & Mojza, 2008) of the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971). Participants had to indicate how they felt about the following mood descriptive adjectives “fatigued”, “tired”, “exhausted”, and “spent” (using the same 5-point Likert scale as for the other measures).

Results

The data had a hierarchical structure with two to three ratings nested in persons. To test the effects of the mindfulness intervention, we therefore used a random coefficient modeling approach that is suitable for multilevel data. This method allowed full exploitation of the hierarchical data structure by investigating change on dependent variables over time (i.e., over the measurement situations) as well as the extent to which these developments were a function of condition (control vs. intervention group). At the beginning, for every dependent variable the null models were created which investigated the fixed relationship between time and the dependent variable. One participant’s observer ratings were excluded from the analysis due to non-reliable response pattern.

Intercorrelations between study variables as well as within-person variability, means, and standard deviations are depicted in Table 1. The reliability analysis revealed good results for the scales trait mindfulness, state mindfulness and state fatigue as well as for state active and empathic listening with Cronbach’s α ranging from .73 to .94. Only the analysis for the baseline and post measurements of self-reflection showed low reliabilities even after the exclusion of the two items with the weakest inter-item correlations ($\alpha = .46$; $\alpha = .34$).

Females showed a significantly higher level of state mindfulness than males ($r(80) = .23, p < .05$). Surprisingly, results did not show a significant correlation between trait mindfulness and state mindfulness ($r(80) = .09, p = .46$). The baseline measurement of self-reflection correlated significantly with trait mindfulness ($r(80) = .25, p < .05$) and fatigue correlated significantly with state mindfulness on the within-person level ($r(80) = .39, p < .01$). Additionally, the correlation of the two listening scales was significant for the between-person ($r(80) = .94, p < .01$) as well as the within-person level ($r(80) = .72, p < .01$). Nonetheless, due to their different theoretical background and the study’s focus on listening behavior, the two scales were used separately and were not conflated to one scale.

Moreover, an independent two-sample *t*-tests showed that the control group ($M = 2.89$, $SD = 1.13$) had significantly more previous experiences with mindfulness exercises than the intervention group groups ($M = 2.22$, $SD = 1.14$, $t [77] = 2.54$, $p < .05$). The effect was of medium size according to the categorization of Cohen (1992) ($d = .59$). Also, although the test did not reach statistical significance for the groups’ baseline levels of trait mindfulness (control group $M = 3.88$, $SD = .41$, intervention group $M = 3.72$, $SD = .46$, $t [75] = 1.50$; $d = .36$, $p = .14$) and self-reflection (control group $M = 4.10$, $SD = .65$, intervention group $M = 4.07$, $SD = .53$, $t [77] = .18$; $d = .05$, $p = .86$) the groups tended to differ somehow (see Table 2).

Table 1

Means, Standard Deviations, and Correlations among the Study Variables.

Variable	α	M	SD	1	2	3	4	5	6	7	8	9	10
1 Gender	--	.42	.50	--									
2 Age	--	46.15	6.98	.03	--								
3 Group	--	.65	.48	-.12	-.03	--							
4 Trait Mindfulness	.76	3.78	.45	.08	.21	-.17	--						
5 Baseline Self-Reflection	.46	4.08	.57	.17	-.16	-.02	.25*	--					
6 Post Measurement Self-Reflection	.34	4.12	.55	-.05	-.03	.10	.07	.28*	--				
7 State Mindfulness	.75	4.41	.59	.23*	.01	.05	.09	.09	.05	--	.15	.00	.39**
8 State Listening Quality	.94	4.07	.46	-.06	-.15	.09	-.13	.08	.05	.03	--	.72**	.10
9 State Active Empathic Listening	.91	3.83	.49	-.08	-.16	.14	-.10	.15	.06	.02	.94**	--	.07
10 State Fatigue	.73	1.63	.57	.11	-.18	-.18	.01	.04	-.11	-.20	-.06	-.10	--

Note. $N = 82$. Gender: 0 = male, 1 = female. Group: 0 = control group, 1 = experimental group. Correlations below the diagonal represent correlations at the between-person level ($N = 82$). Correlations above the diagonal represent correlations at the within-person level ($N = 246$).

Cronbach’s α coefficients for the state variables active listening and empathic listening were calculated for each situation individually – consisting of three individual ratings (colleagues left and right and expert) – and then averaged across the 3 measurement points. Cronbach’s α coefficients for the state variables mindfulness and fatigue were calculated for each situation individually – consisting of two individual ratings – and then averaged across the 2 measurement points.

* $p < .05$, ** $p < .01$, (two-tailed).

Table 2

Means of the Outcome Variables for the Different Situations for Experimental Group and Control Group.

Situation	Previous Experiences		Trait Mindfulness		Self-Reflection		State Mindfulness		State Listening Quality		State Active Empathic Listening		State Fatigue	
	CG	EG	CG	EG	CG	EG	CG	EG	CG	EG	CG	EG	CG	EG
Baseline	2.89 (1.11)	2.22 (1.14)	3.88 (.41)	3.72 (.46)	4.10 (.65)	4.07 (.53)	--	--	--	--	--	--	--	--
1					--	--	--	--	3.98 (.37)	4.03 (.49)	3.66 (.36)	3.71 (.59)	--	--
2					--	--	4.30 (.83)	4.40 (.54)	4.12 (.52)	4.10 (.50)	3.83 (.48)	3.93 (.57)	1.99 (.68)	1.76 (.67)
3					4.05 (.53)	4.17 (.56)	4.61 (.41)	4.49 (.54)	3.93 (.46)	4.20 (.66)	3.73 (.44)	4.03 (.68)	1.53 (.64)	1.32 (.56)

Note. N = 82. Experimental group (EG) = 53, Control group (CG) = 29. Means (Standard Deviation).

Variability and ICC. The Interclass Correlation Coefficient (ICC1) was calculated using the unconditional random coefficient modeling (Bliese & Ployhart, 2002; Shek & Ma, 2011) for determining the variances in variables lying both between- and within-persons. State mindfulness showed an ICC1 of .53 which indicates that 53% of variation accounted for between person variation and 47% lay within person. State listening quality showed an ICC1 of .66, indicating that 66% of variance in active listening was between persons, while 34% referred to within-person variation. For state active empathic listening the calculated ICC1 was .62. This implies that 62% of variance was at the between-person level whereas 34% lay within person. State fatigue showed an ICC1 of .39, which indicates that 39% of variation lay between person, while 61% of variation accounted for within person variation. All in all, a sufficient amount of within-person variance exists. Ergo, a multilevel model is required.

Testing of Hypotheses

Mindfulness Intervention and State Mindfulness. The mindfulness intervention was presumed to positively influence state mindfulness over the duration of the workshop (Hypothesis 1). In order to test this hypothesis, a multi-level analysis was conducted with state mindfulness as the dependent variable (see Appendix A). First, state mindfulness alone was entered in a random intercept model to calculate the Baseline Model (see Baseline Model). The addition of a fixed effect of the predictor time did not improve the model fit ($\Delta x^2 = 3.07, \Delta df = 1, p = .08$; see Model 1). Next, including the predictor also as a random intercept did not improve the model fit either ($\Delta x^2 = .00, \Delta df = 1, p = .08$; see Model 2). Afterwards, the predictor condition was added as a fixed effect (see Model 3). This did not

improve the model fit ($\Delta x^2 = 0.01$, $\Delta df = 1$, $p = .92$), nor did the addition of the interaction between the two predictors time and condition ($\Delta x^2 = 1.17$, $\Delta df = 1$, $p = .28$; see Model 4). Moreover, both groups had a high level of state mindfulness at both measurement points (see Figure 2). Taken together, no effect of the mindfulness intervention on leaders’ state mindfulness was found. Based on these results, Hypothesis 1 was not supported.

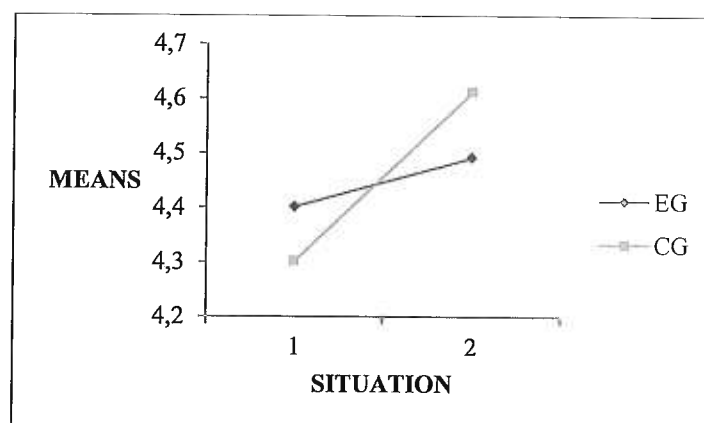


Figure 2. Changes in state mindfulness as a function of condition.

Mediator State Mindfulness. The manipulation check analyzing the influence of the mindfulness intervention on state mindfulness (Hypothesis 1) did not show a significant effect. Thus, a mediation effect of the condition on the outcome variable via state mindfulness is meaningless to test. Consequently, Hypothesis 4, 6 and 8 were not supported.

However, the non-significant manipulation check could be explained by the fact that there was a ceiling effect in state mindfulness (see Figure 2). The high level of state mindfulness of the participants of the control group was probably due to the higher baseline level of trait mindfulness and their significantly higher previous experiences with mindfulness exercises (see Table 2). Also, by constantly asking the participants to pay attention to their behavior, the workshop setting did not allow for unmindful behavior to occur as much as in natural settings. All in all, these factors made it difficult for the intervention group to reach or even exceed the level of state mindfulness in the control group via the short-term intervention over the course of just one and a half days.

Nonetheless, to our knowledge to date no study assessed the influence of a mindfulness intervention on any outcome variable with use of observer ratings and it might still be possible that the intervention had a direct influence on the participants’ listening behavior. Additionally, researchers stated that state mindfulness should be measured by combining different assessment methods and that new methods should be developed and tested (Baer, 2011; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Thus – despite the non-significant

manipulation check – the direct influence of the mindfulness intervention on colleagues’ and experts’ assessments of leaders’ listening behavior (H2, H3) will still be analyzed.

Moreover, previous studies supported a direct, sustainable effects of mindfulness interventions on participants’ physical well-being (i.e., Chronic Fatigue Syndrome (CFS) (Surawy et al., 2005); general fatigue levels and functional impairment (Deale et al., 1997)) without explicitly testing changes in state mindfulness. Thus, also the direct impact of the mindfulness intervention on leaders’ fatigue levels (H7) will be analyzed.

Mindfulness Intervention and Listening. The next hypotheses presumed that the mindfulness intervention will have a positive effect on leaders’ listening abilities including both leaders’ listening quality (Hypothesis 2) and active empathic listening (Hypothesis 3). In order to test Hypothesis 2, a multi-level analysis was conducted with active listening as the dependent variable (see Appendix B). To begin with, listening quality was inserted into a random intercept model to calculate the Baseline Model (see Baseline Model). Afterwards, the predictor time was added in a fixed slope model (see Model 1). The model fit did not improve ($\Delta x^2 = 1.10$, $\Delta df = 1$, $p = .29$). Following, the random intercept of the predictor time was added, which also did not lead to a better model fit ($\Delta x^2 = .00$, $\Delta df = 1$, $p = .29$; see Model 2). Next, the fixed effect for the predictor condition was included (see Model 3). This did not significantly improve the model fit ($\Delta x^2 = 2.02$, $\Delta df = 1$, $p = .16$). Last, the effect of the interaction between the two predictors was added, which did not lead to an improved model fit either ($\Delta x^2 = 1.49$, $\Delta df = 1$, $p = .22$; see Model 4). However, taking a look at the differences in means between the two conditions at the different measurement times during the workshop did show a development that was in line with the hypothesis (see Figure 3). Nonetheless, no significant influence of the mindfulness intervention on leaders’ perceived listening quality over time was found. Consequently, Hypothesis 2 was not supported.

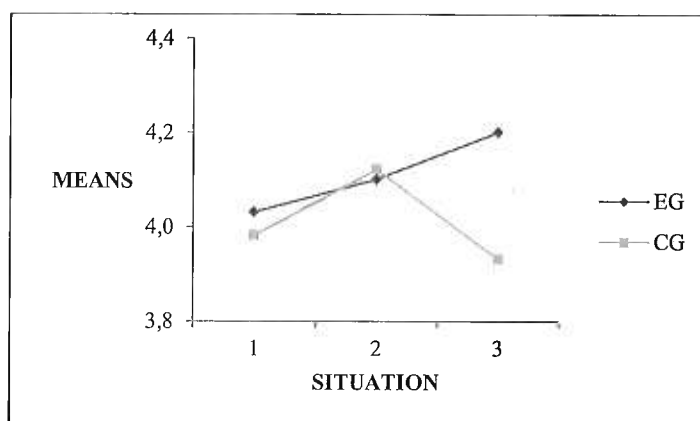


Figure 3. Changes in listening quality over time (situations during the workshop) as a function of condition.

Results of the multilevel analysis of the influence of the mindfulness intervention on leaders' active empathic listening are displayed in Table 3. First, active empathic listening was inserted into a random intercept model to calculate the Baseline Model (see Baseline Model). Next, the fixed effect for the predictor time was included in the model (see Model 1). This addition led to a significantly increased model fit ($\Delta x^2 = 6.99$, $\Delta df = 1$, $p < .01$). Following, the random slope for time was added to the model, which did not lead to a better model fit ($\Delta x^2 = .00$, $\Delta df = 1$, $p = .008$; see Model 2). Subsequently, the fixed effect for the predictor condition was included (see Model 3). As a result, the model fit increased significantly ($\Delta x^2 = 3.97$, $\Delta df = 3$, $p < .05$). In addition, Model 4 included the fixed effect of the interaction of both predictors (time and condition). This change did not lead to a significantly better model fit ($\Delta x^2 = 1.85$, $\Delta df = 1$, $p = .17$). Thus, Model 3 represented the model that fitted best. Results showed a significant prediction of both time ($\gamma = .12$, $SE = .04$, $t = 2.71$, $p < .01$) as well as condition ($\gamma = .15$, $SE = .07$, $t = 2.00$, $p < .05$) concerning leaders' level of empathic listening. The interaction between the two predictors did not show a significant effect, however. The means of the two groups at the different measurement points showed that there was a significant increase in the experimental group over the three measurement point whereas the means of the control group first increased and then declined (see Figure 4). In sum, Hypothesis 3 was partly supported.

Table 3

Multilevel Analysis for Active Empathic Listening Behavior (H3).

DV	Baseline Model			Model 1			Model 2			Model 3			Model 4		
	AEL			AEL			AEL			AEL			AEL		
Parameters	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t
Fixed Effects															
Intercept	3.83***	.04	105.04	3.60***	.10	37.85	3.60***	.10	37.85	3.50**	.11	33.02	3.66***	.16	23.38
Time			-.15	.12**	.04	2.66	.12**	.04	2.66	.12**	.04	2.71	.04	.07	.56
Condition										.15*	.07	2.00	-.10	.20	-.50
Time x Condition													.12	.09	1.36
Random Effects															
Residual	.32	.03		.31	.03		.31	.03		.31	.03		.30	.03	
Intercept	.00	.00		.00	.00		.00	.00		.00	.00		.00	.00	
-2*LL	410.215			403.227			403.227			399.256			397.403		
df	3			4			5			6			7		
Δ-2**LL				6.99**			0.00			3.97*			1.85		
Δ df				1			1			1			1		

Notes. N = 82. DV = Dependent Variable; SE = Standard Error; LL = Log Likelihood; AEL = Active Empathic Listening. Models are random intercept-fixed slope models. Model 1 is compared to the Baseline Model. Model 2 is compared to Model 1, Model 3 is compared to Model 2 and Model 4 is compared to Model 3. *p<.05, **p<.01, ***p<.001.

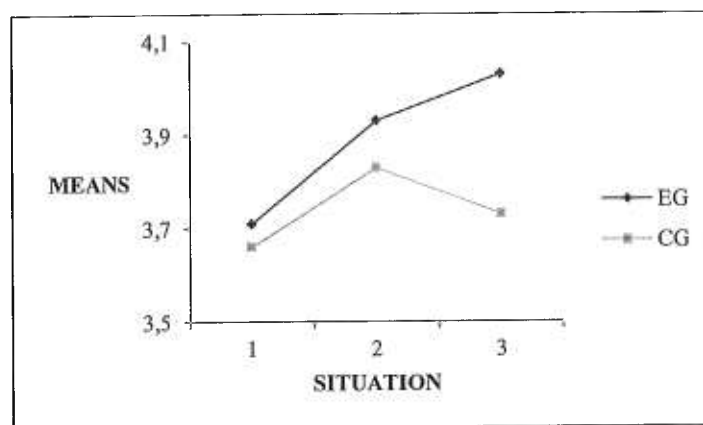


Figure 4. Changes in active empathic listening behavior over time (situations during the workshop) as a function of condition.

Mindfulness Intervention and Self-Reflection. Despite the low internal consistency of the self-reflection measurements, Hypothesis 5 assuming that the mindfulness intervention impacts leaders’ self-reflection ability was tested for completeness (see Appendix C). In order to test this statement, the Baseline model was created by inserting self-reflection into a random intercept model (see Baseline Model). Neither the addition of the fixed effect of the predictor time ($\Delta x^2 = .21$, $\Delta df = 1$, $p = .65$; see Model 1) nor the inclusion of a random effect of the predictor time ($\Delta x^2 = .00$, $\Delta df = 1$, $p = .65$; see Model 2) led to a significant improved

model fit. Following, the fixed effect of the predictor condition was included (see Model 3). This did not increase the model fit ($\Delta x^2 = .20$, $\Delta df = 1$, $p = .66$). Last, the fixed effect of the interaction between the two predictors was included in Model 4, which also did not lead to a better model fit ($\Delta x^2 = .55$, $\Delta df = 1$, $p = .46$). Consequently, no significant effect of the mindfulness intervention on leaders’ ability to self-reflect was found. Based on these results, Hypothesis 5 was not supported.

Mindfulness Intervention and Fatigue. The mindfulness intervention was predicted to presumably relate to leaders’ fatigue levels (Hypothesis 7). Results of the multilevel analysis are displayed in Table 4. In order to analyze this relationship first fatigue level was inserted as dependent variable into a random intercept model to calculate the Baseline Model (see Baseline Model). Afterwards, the fixed effect of the predictor time was added (see Model 1). As a result, the model fit improved significantly ($\Delta x^2 = 16.79$, $\Delta df = 1$, $p < .001$). Additionally, the random slope for the predictor time was included (see Model 2). This adaptation did not improve the model fit ($\Delta x^2 = .00$, $\Delta df = 1$, $p = .00$). Next, the fixed effect for the predictor condition was included (see Model 3). This led to an additional significant improvement of the model fit ($\Delta x^2 = 4.18$, $\Delta df = 1$, $p < .05$). The addition of the interaction between the two predictors did not improve the model fit significantly ($\Delta x^2 = .02$, $\Delta df = 1$, $p = .88$; see Model 4). Thus, Model 2 fitted best. Results showed that time ($\gamma = -.44$, $SE = .10$, $t = -4.27$, $p < .001$) as well as condition ($\gamma = -.22$, $SE = .11$, $t = -2.06$, $p < .05$) significantly predicted leaders’ fatigue levels. Taking a look at the differences between the means of both groups over the course of the workshop showed that the fatigue level decreased in both groups and was lower in the intervention group at both times (see Figure 5). All in all, results showed a significant main effect of time and condition on leaders’ fatigue levels. However, no significant effect of the interaction between the two predictors was found. Thus, Hypothesis 7 was partially supported.

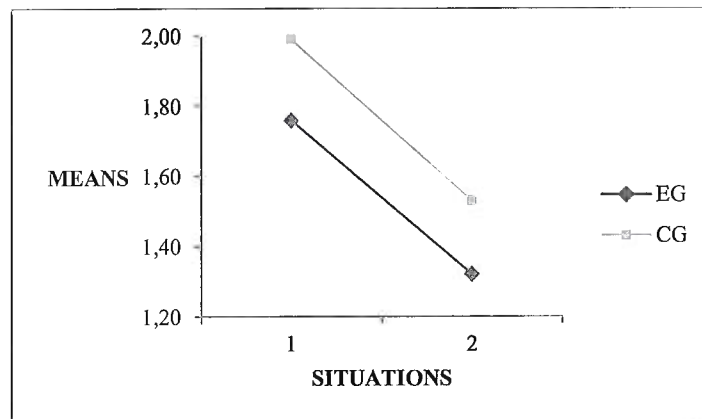


Figure 5. Changes in fatigue over time (situations during the workshop) as a function of condition.

Table 4

Multilevel Analysis for Fatigue (H7).

DV	Baseline Model			Model 1			Model 2			Model 3			Model 4		
	Estimate (y)	SE	t	Estimate (y)	SE	t	Estimate (y)	SE	t	Estimate (y)	SE	t	Estimate (y)	SE	t
Fixed Effects															
Intercept	1.63***	.06	29.14	2.73***	.27	10.21	2.73***	.27	10.21	2.87***	.27	10.55	2.92***	.43	6.84
Time				-.44***	.11	-4.22	-.44***	.11	-4.22	-.44***	.10	-4.27	-.46**	.17	-2.76
Condition										-.22*	.11	-2.06	-.30	.54	-.55
Time x Condition													.03	.21	.15
Random Effects															
Residual	.45	.05		.40	.05		.39	.05		.39	.05		.39	.05	
Intercept	.00	.00		.00	.00		.00	.00		.00	.00		.00	.00	
-2*LL	293.279			276.492			276.492			272.315			272.293		
df	3			4			5			6			7		
Δ-2**LL				16.79***			0.00			4.18*			.02		
Δ df				1			1			1			1		

Notes. N = 82. DV = Dependent Variable; SE = Standard Error; LL = Log Likelihood; F = Fatigue. Models are random intercept-fixed slope models. Model 1 is compared to the Baseline Model. Model 2 is compared to Model 1, Model 3 is compared to Model 2 and Model 4 is compared to Model 3. *p<.05, ** p<.01, ***p<.001.

Discussion

Given the present developments in leadership research and the already established theoretical connection to mindfulness, the present study seeks to investigate the effectiveness of a short-term mindfulness intervention on important abilities for today’s leaders. Results were miscellaneous, providing support for some but not all hypotheses. An effect of the intervention on leaders’ empathic listening behavior and their fatigue levels but not on leaders’ state mindfulness, perceived listening quality and self-reflection was found.

First – contrary to our expectations – results did not show a significant correlation between trait and state mindfulness. One possible explanation for this could be the fact that the correlations were analyzed including all participants from both groups. Thus, participants that received the intervention were already affected by the exercises and therefore, despite low trait mindfulness, their state mindfulness could have already increased to a level similar to participants with high trait mindfulness in the control group. Therefore, the correlation could have vanished due to the mindfulness intervention itself.

Furthermore, results did not show a significant effect of the intervention on state mindfulness which was surprising considering previous study results (e.g., Hülshager et al., 2012; Hülshager, Feinholdt, & Nübold, 2015). However, this could be due to the fact that there was a ceiling effect in state mindfulness (see Figure 2) which could be explained by the higher baseline level of trait mindfulness and the significantly higher experiences with mindfulness exercises of the participants of the control group (see Table 2) leading to a higher starting level of state mindfulness for them. Additionally, the items measuring state mindfulness were quite extreme (e.g., “I drive places on ‘automatic pilot’...”) and all reverse coded (measuring non-mindfulness) and the workshop setting did not allow for unmindful behavior to occur as much as in natural settings because the participants were constantly asked to pay attention and be aware of their behavior. As a result, it was difficult for the participants of the intervention group to reach or even exceed the state mindfulness level of the control group via the short-term intervention over the course of just one and a half days and the short-term mindfulness exercises did not make a difference on top of the workshop elements.

Second, there were mixed findings concerning the influence of the mindfulness intervention on leaders’ listening behavior. Results for both scales that were assessed showed similar developments (see Table 2, Figure 3 and Figure 4). However, only the multilevel analysis for the Active Empathic Listening Scale (Drollinger et al., 2006) showed a significant group difference. A closer look at the specific items for assessing leaders’ listening behavior shows that the items of those two scales focus on slightly different aspects. The Perceived Listening Quality Scale (Lloyd et al., 2015) on the one hand includes items that focus on more *implicit* listening behavior like for example the colleagues’ interest in the participants’ statements (e.g., “I *feel* my colleague is interested in what I have to say”) and the participants’ reactions toward their colleagues’ behavior (e.g., “I *feel* my colleague makes it easy for me to open up”). On the other hand, the items of the Active Empathic Listening Scale assess more *explicit* listening behavior that is potentially easier to observe (e.g., “My colleague *asks*

questions that show his understanding of my position”; “My colleague *shows me* that he is listening by his *body language* (e.g., head nods)”). Consequently, it was probably easier for the participants and experts to rate these items.

The multilevel analysis for the influence of the mindfulness intervention on leaders’ active empathic listening showed significant main effects for time and condition. However, the interaction between both predictors was not significant. This could be explained by the fact that this study’s test was very conservative because the experimental group as well as the control group participated in a workshop, which – among others – also trained general communication skills. Thus, the increase in listening behavior at situation two of the participants in the control group could be explained by the influence of the workshop itself.

However, the conservatism of our design emphasizes the impact of the significant main effect of the condition. Participants of the experimental group showed a consistent increase in their listening behavior over all three situations whereas the listening behavior of participants of the control group only displayed a peak at situation two and then decreased again. Additionally, the level of displayed active empathic listening behavior of leaders in the experimental group was higher at all times of measurement (see Figure 4). Consequently, results show that already a very short-term mindfulness intervention has a significant positive influence on leaders’ displayed listening behavior and that it causes significant behavioral changes which can be noticed by others in social interactions.

Third, the proposed relationship between the mindfulness intervention and leaders’ ability to self-reflect was not supported by the findings. The outcome variable was assessed with a collection of six items of the Self-Reflection and Insight Scale (Grant et al., 2002). Even after the exclusion of the two items with the weakest inter-item correlations, the internal consistency of the scale was unacceptably low. These results indicate that the scale did not consistently measure the same factor. In behavioral research, the average reported alpha coefficients range from .70 to .82 and even though the scale entailed two dimensions of self-reflection, a Cronbach’s alpha of .46 or lower is not sufficient for valid analyses (Cortina, 1993; Peterson, 1994). The low internal consistency could have been due to the fact that the two dimensions were assessed by just three items each, whereas the original scale consists of six items for the dimension *engagement in self-reflection* and eight items for the *insight* scale with Cronbach’s alpha ranging from .87 to $\alpha = .91$ (Grant et al., 2002). The exclusion of the third dimensions of the original scale (*need for self-reflection*) as well as the restriction of the two included dimensions to only three items each were probably the main causes for the low internal consistency (Cortina, 1993). Thus, even though the multilevel analysis for self-

reflection did not show a significant effect, this result should be regarded with caution due to the low internal consistency of the scale.

Fourth, the proposed influence of the mindfulness intervention on leaders’ fatigue levels was supported by the findings. Fatigue was only assessed twice (once at the end of every workshop day). As the second workshop day ended after half a day, the second measurement took place at lunchtime. This may be an explanation for the significant main effect of the predictor time because the participants of both groups naturally had lower fatigue levels after only half a workshop day than after one whole day. It could therefore also be an explanation for the non-significant effect of the interaction between the two predictors (time and condition). Nonetheless, results showed that the participants of the experimental group had lower fatigue levels at both measurement points (see Figure 5). The analysis revealed a significant main effect of the condition. This finding is in line with previous study results which also found a positive effect of mindfulness interventions on fatigue or other states of exhaustion (Carlson & Garland, 2005; Hülshager et al., 2014). Even though in earlier studies this effect was always induced by daily mindfulness interventions which lasted at least ten days, our study’s intervention, only lasting over 14 minutes in total and being carried out over the course of just one and a half days, significantly reduced fatigue in the mindfulness group. Thus, the significant main effect of the condition can be regarded as very meaningful. It indicates that leaders can directly physically benefit from the implementation of a very short-termed mindfulness intervention. Thus, already integrating small mindfulness exercises in their everyday lives could have a large impact on their physical well-being.

Limitation and future directions

The present study has several limitations that are important to note. First of all, the sample size ($N = 82$) was not big enough for reaching a medium effect size ($f^2 = .15$). A calculation with G*Power showed a required minimum sample size of at least $N = 107$ (Faul, Erdfelder, Lang, & Buchner, 2007). Also, the control group ($N = 29$) was much smaller than the experimental group ($N = 53$). Ideally, both groups should have had a similar size. Therefore, it would be interesting to repeat the study with a bigger overall sample size and an equal number of participants for the control and the experimental group. Moreover, participants in both groups were part of a workshop which already focused on interpersonal interaction and general communication skills which already could have had an effect on both groups. Consequently, future studies should be conducted to investigate the effect of mindfulness practice in the context of leaders’ everyday lives or at least in a less “developmental context”

(e.g., strategy workshops). We also recommend providing a different intervention for the control condition (e.g., doing sums) in order to build up an active control group.

Another weakness was the scale that was used to assess leaders’ self-reflection. Although the original scale (Self-Reflection and Insight Scale; Grant et al., 2002) shows a high internal consistency, the six items that were chosen for this study did not reveal sufficient internal consistency. Therefore, the results of the multilevel analysis for the influence of the mindfulness intervention on leaders’ self-reflection abilities should be treated with caution. However, the theoretical background indicated a connection between mindfulness interventions and self-reflection. Thus, future research should include this relationship again and for example use all items of the original scale for a valid assessment.

Moreover, the mindfulness intervention itself could be viewed as both a limitation and asset. Especially the short-term character of the intervention (14 minutes) in connection with the significant results concerning leaders’ listening behavior and fatigue levels underlines the impact already a little time investment in mindfulness exercises can have. However, particularly long-term mindfulness interventions have shown significant results (Carlson & Garland, 2005); thus, future studies in the field of leadership research should investigate the influence of a long-term mindfulness intervention. Particularly for a significant change in state mindfulness, a longer intervention seems to be required. Such a design might potentially also increase the likelihood of finding a mediator effect of state mindfulness.

Furthermore, a number of meaningful moderators could be interesting for future investigations of mindfulness and listening. For example, there might be a moderating function of personality dimensions on mindfulness (e.g., positive effect of conscientiousness and positive affect; negative effect of neuroticism and negative affect (Giluk, 2009)). Additionally, extraversion could positively influence an empathic listening style (Weaver, Watson, & Barker, 1996) and especially a high level of psychoticism could reduce the ability for empathic responses (Richendoller & Weaver, 1994). Therefore, personality traits should be included as moderators in future studies.

Last, although results revealed a significant influence of the mindfulness intervention on leaders’ active empathic listening behavior no significant effect on leaders’ perceived listening quality was found. This may have been due to the fact that participants and experts had trouble rating implicit listening as assessed by the Perceived Listening Quality Scale. Additionally, all items used for assessing participants’ listening behavior were originally developed for dyadic interaction between parties of different hierarchical levels (i.e., appraisal interviews between a leader and his follower, conversation between sales persons and their

customers (Comer & Drollinger, 1999; Drollinger et al., 2006; Lloyd et al., 2015)). Instead, participants in this study rated two colleagues after group discussions. Thus, they could not refer to a focused one-on-one conversation. Especially rating the perceived listening quality seemed to be difficult without sufficient dyadic interaction. Subsequently, it could be interesting for future research to investigate the impact of a mindfulness intervention on leaders’ listening behavior in one-on-one interactions. Moreover, in the present study rater and ratee were colleagues on the same hierarchical level in the organization. Thus, rather focusing on *followers’* observations of leaders’ listening behavior could be an interesting future endeavor.

Theoretical and practical implications

Theoretically, our results implicate that the concept of state mindfulness as a main result of mindfulness interventions should be reconsidered. Results showed that the intervention, despite its lacking effect on state mindfulness, led to behavioral changes that could be observed directly. Therefore, the impact of the mindfulness intervention was observed prior to the participants’ realization of these changes in their mind. Thus, observer ratings seem to capture changes caused by mindfulness interventions prior to self-reports of state mindfulness. Consequently, this study design which combined different sources (self-report, peer, and expert rating) is also recommended for future research.

The study findings reveal some important implications for the role of mindfulness in the leadership context. In addition to the empirical analysis, the participation rate of 100 percent and leaders’ already existing experiences with mindfulness exercises showed that the topic has already become a very important one for leaders today. Participants followed the instructions of the mindfulness intervention very open-mindedly and seriously.

Leaders are particularly meaningful players in the organizational context. They have a vast impact within organizations. For example, they positively influence their followers’ organizational citizenship behavior (OCB) through the establishment of strong dyadic relationships (Ilies et al., 2007). In turn, employees’ higher levels of OCB positively influences a variety of individual-level outcomes (e.g., employee performance) as well as organization-level outcomes (e.g., efficiency, reduced costs, customer satisfaction) (Podsakoff, Whiting, Podsakoff, & Blume, 2009). In order to be able to build up strong relationships with their followers, leaders need to possess good communication skills. The present study showed that these could be improved by mindfulness exercises. Although large international corporations (e.g., Google, Aetna, Intel, General Mills) already identified the

benefits of mindfulness exercises for their employees and offer programs for implementing those in their daily working routines (Schaufenbuel, 2015), these practices have not yet been established explicitly for leaders yet. Even though leaders already have a full schedule and work over hours, this study’s findings impressively demonstrate that already investing a small amount of time in mindfulness exercises can lead to significant and observable behavioral as well as physical improvements of leaders.

Conclusion

The aim of this study was to empirically support the theoretical claims in recent leadership literature concerning the impact of mindfulness interventions on important abilities for today’s leaders. Results supported the positive influence of a short-term mindfulness intervention on leaders’ empathic listening behavior. Thus, mindfulness exercises can immediately lead to behavioral changes that result in a more positive perception of leaders’ behavior by their colleagues and by experts. Additionally, the mindfulness intervention resulted in a significant decrease in leaders’ fatigue levels which demonstrates its direct positive impact on physical symptoms caused by stress. However, more research needs to be conducted concerning the impact of mindfulness interventions on leaders’ self-reflection and state mindfulness as our intervention did not significantly impact those aspects for various reasons.

This study was the first to investigate the direct effect of a short-term mindfulness intervention on leaders. Our results impressively underline the significant positive impact that such a short-term intervention can have. Leaders already have a lot on their mind and a full schedule. However, this study’s findings lead to the conclusion that leaders’ short and focused time investments in mindfulness exercises can help them to significantly improve not only their daily work but also their overall physical well-being in order to deal with their daily challenges in a more successful and healthy manner. Consequently, it is worth the effort for leaders to make time for just a few minutes of mindfulness exercises every day because it may pay off for them on the long run.

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Appendix A: Multilevel Analysis State Mindfulness (H1)

DV	Baseline Model			Model 1			Model 2			Model 3			Model 4		
	MS			MS			MS			MS			MS		
Parameters	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t
Fixed Effects															
Intercept	4.45***	.05	91.56	4.03***	.24	16.45	4.03***	.24	16.45	4.03***	.25	15.95	3.70***	.40	9.24
Time				.17	.10	1.76	.17	.10	1.76	.17	.10	1.76	.30	.16	1.94
Condition										-.01	.10	-1.1	.53	.50	1.04
Time x Condition													-.21	.20	-1.09
Random Effects															
Residual	.34	.04		.34	.04		.34	.04							
Intercept	.00	.00		.00	.00		.00	.00							
-2*LL	256.009			252.954			252.954			252.942			251.771		
df	3			4			5			6			7		
Δ -2**LL				3.07			0.00			.01			1.17		
Δ df				1			1			1			1		

Notes. $N = 82$. DV = Dependent Variable; SE = Standard Error; LL = Log Likelihood; MS = Mindfulness State.

Models are random intercept-fixed slope models. Model 1 is compared to the Baseline Model. Model 2 is compared to Model 1, Model 3 is compared to Model 2 and Model 4 is compared to Model 3.

*** $p < .001$.

Appendix B: Multilevel Analysis for Listening Quality (H2)

DV	Baseline Model			Model 1			Model 2			Model 3			Model 4		
	LQ			LQ			LQ			LQ			LQ		
Parameters	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t	Estimate (γ)	SE	t
Fixed Effects															
Intercept	4.07***	.03	121.33	3.99***	.09	45.03	3.99***	.09	45.03	3.92***	.10	39.56	4.05***	.15	27.69
Time				.04	.04	1.05	.04	.04	1.05	.04	.04	1.07	-.02	.07	-.32
Condition										.10	.07	1.43	-.11	.18	-.59
Time x Condition													.10	.09	1.22
Random Effects															
Residual	.27	.02		.27	.02		.27	.02							
Intercept	.00	.00		.00	.00		.00	.00							
-2*LL	369.666			368.563			368.563			366.541			365.052		
df	3			4			5			6			7		
Δ -2**LL				1.10			0.00			2.02			1.49		
Δ df				1			1			1			1		

Notes. N = 82. DV = Dependent Variable; SE = Standard Error; LL = Log Likelihood; LQ = Listening Quality. Models are random intercept-fixed slope models. Model 1 is compared to the Baseline Model. Model 2 is compared to Model 1, Model 3 is compared to Model 2 and Model 4 is compared to Model 3. ***p<.001.

Appendix C: Multilevel Analysis for Self-Reflection (H5)

DV Parameters	Baseline Model			Model 1			Model 2			Model 3			Model 4		
	SR			SR			SR			SR			SR		
	Estimate (<i>y</i>)	SE	t	Estimate (<i>y</i>)	SE	t	Estimate (<i>y</i>)	SE	t	Estimate (<i>y</i>)	SE	t	Estimate (<i>y</i>)	SE	t
Fixed Effects															
Intercept	4.10***	.05	89.30	4.00***	.23	17.27	4.00***	.23	17.27	3.97***	.24	16.50	4.19***	.38	10.92
Time				.04	.09	.46	.04	.09	.46	.04	.09	.47	-.05	.15	-.31
Condition										.04	.10	.15	-.31	.48	-.64
Time x Condition													.14	.19	.75
Random Effects															
Residual	.31	.04													
Intercept	.00	.00													
-2*LL	247.763			247.553			247.553			247.355			246.801		
<i>df</i>	3			4			5			6			7		
Δ-2**LL				.21			0.00			.20			.55		
Δ <i>df</i>				1			1			1			1		

Notes. *N* = 82. DV = Dependent Variable; SE = Standard Error; LL = Log Likelihood; SR = Self-Reflection. Models are random intercept-fixed slope models. Model 1 is compared to the Baseline Model. Model 2 is compared to Model 1, Model 3 is compared to Model 2 and Model 4 is compared to Model 3. ****p* < .001.

