UNIVERSITAT JAUME·I

Can Mindfulness foster well-being and performance at work?

A compendium of intervention studies

PhD Candidate:

Cristián Coo Calcagni

Supervisors:

Dra. Susana Llorens Gumbau

Dra. Marisa Salanova Soria

Mayo 2020

Programa de Doctorado en Psicología

Escuela de Doctorado de la Universitat Jaume I

Can Mindfulness foster well-being and performance at work?

A compendium of intervention studies

¿Puede el Mindfulness promover el bienestar y el desempeño en el trabajo?

Un compendio de estudios de intervención

Memoria presentada por Cristián Coo Calcagni **para optar al grado de doctor/a por la Universitat Jaume I**

Cristián Coo Calcagni Susana Llorens Gumbau Marisa Salanova Soria

Castellón de la Plana, Mayo de 2020

Financiación recibida

La realización de la presente tesis doctoral ha sido posible gracias a la financiación de:

Universitat Jaume I (PREDOC/2016/25).

Universitat Jaume I (#B/2017/81).

Ministerio de Economía y Competitividad (#PSI2015-64933-R).

“The quality of our life depends on the seeds we water in our minds.”

— Thich Nhat Hanh

Can Mindfulness foster well-being and performance at work?
A compendium of intervention studies

Prólogo

La primera vez que se pasó por mi mente la posibilidad de investigar la experiencia del mindfulness desde un punto de vista científico fue durante el primer retiro de meditación al que asistí en mi vida, en el centro budista zen Plum Village en el sur de Francia. Sin saberlo, la temática del retiro giraba en torno al dialogo entre científicos reconocidos y monjes venerables. Desde el momento inicial quede absolutamente fascinado por el tipo de conversaciones que surgían en ese espacio. Desde astrofísicos hasta biólogos discutiendo sobre las distintas propuestas filosóficas y experiencias propias de la práctica del mindfulness con monjes que hacen de su vida un ejemplo de compromiso con la práctica, por decirlo de alguna manera, simplemente apasionante. Esos diálogos junto con la experiencia de la práctica cotidiana en cada pequeño momento despertaron en mi el impulso a recrear de alguna manera esa misma experiencia de asombro. Creo que de ese momento nace mi interés por la investigación científica en sentido más profundo.

Creo, además, que en la vida surgen momentos en los que se nos ofrece la oportunidad de alinear nuestros intereses y talentos en función de servir a una causa mayor. En mi caso, siento que descubrir la práctica y la forma de vida que implica el mindfulness fue un regalo que viene junto con la invitación a sostener un espacio de práctica que va más allá de mí mismo. Y actuar de alguna manera como un traductor hacia el mundo científico de los beneficios de cultivar una práctica comprometida con el mindfulness en un sentido profundo y a la vez amigable y fácil de comprender.

Espero que esta tesis doctoral sea el primero de muchos pasos en este camino, que no lleva a ningún lugar en particular sino a despertar aquello que hace despertar nuestro corazón, nuestra curiosidad, y nuestra alegría de disfrutar del milagro de estar vivos.

Chapter 1

General Introduction

Throughout the last twelve years, working conditions across the globe have been negatively affected after events such as 2008's subprime crisis, the economic trade war between China and the USA, the UK exiting the European Union, and, more recently, the strike of a global pandemic event with COVID-19. In a way, all of these events have contributed directly or indirectly to the precarization of working conditions in a myriad of different aspects. For example, workers across different countries in Europe report higher levels of job insecurity and workload, alongside no pay increases and diminishing learning opportunities (Eurofund, 2013). The International Labor Organization points that overall job quality as stayed practically stagnated during the last ten years in terms of working time quality, social environment, and skill use, and discretion (Eurofund & ILO, 2019). And the recent geopolitical decisions taken by different governments due to the COVID19 pandemic have only brought more uncertainty and ambiguity to an already complex scenario. All this taken together sets the stage for an increase in stress and mental health-related complications all around the globe due to the progressive deterioration of working conditions. Stress and mental health problems at work are the cause of approximately 50% of all lost working days and lead to high financial costs to organizations as well as society in terms of human suffering and reduced economic performance (EU-OSHA, 2014). Conservative estimates suggest the costs of work-related stress and mental health problems cost about 3-4% of GDP per year in the European Union countries (Leka & Jain, 2017).

Beyond the obvious economic and geopolitical implications our present situation forebears, the biggest concern is workers' health and wellbeing. The European Union made mental health and wellbeing at work one of its strategic priorities in its development agenda for the second

half of the present decade (European Union, 2016). And the promotion of health wellbeing at work is being advocated as a critical element to address challenges such as an aging workforce, and the rise of multiculturality (Le Blanc & Oerlemans, 2016). Mental health includes the absence of mental disorders as well as the presence of psychological wellbeing. Probably the most well-known definition of mental health at work was proposed by the World Health Organization and defines it as a state of wellbeing in which every individual can realize his or her potential, cope with normal levels of stress, work productively and fruitfully, and contribute to the community (WHO, 2005). Perhaps the most critical issue present in the scientific evidence on the promotion of mental health and wellbeing at work is the overwhelming accumulation of evidence on negative aspects of mental health and its consequences. Comparatively, psychological wellbeing, and its effects are relatively understudied (Bartlett et al., 2019; E. Gilbert et al., 2018; White et al., 2019). This imbalance becomes more acute when it comes to the study of intervention strategies aimed at increasing mental health and wellbeing, the majority of evidence is on the side of diminishing negative aspects of mental health at work. In contrast, the research on the promotion of wellbeing is minimal in comparison (White et al., 2019). Thus, there is a significant gap and opportunity that calls for the exploration of intervention strategies focusing on the positive aspects of mental health and wellbeing.

Positive Psychology is the field of scientific knowledge that focuses on the study of positive subjective experiences, positive individual traits, and positive institutions (Seligman & Csikszentmihalyi, 2014). And it seeks to establish a model of human being that includes the positive features that make life worth living going beyond the traditional study of pathology and suffering. In turn, Positive Organizational Psychology is defined as the scientific study of positive subjective experiences and traits in the workplace, as well as positive organizations and

applications to improve the effectiveness and quality of life in them (Stewart I. Donaldson & Ko, 2010).

A promising approach to increase well-being is through positive psychology interventions (PPIs)—that is, treatment methods or intentional activities that aim to cultivate positive feelings, behaviors, or cognitions (Sin & Lyubomirsky, 2009). Positive interventions at work refer to strategies focused on employees, teams, and organizations that improve optimum performance and health to promote higher levels of quality of work and organizational excellence (Salanova et al., 2013). Recently, the scientific community in the field of Occupational Health Psychology (Bartlett et al., 2019) and Positive Organizational Psychology (Lomas et al., 2017) has focused on the potential benefits of mindfulness and mindfulness-based interventions (MBIs) as one of the most promising intervention strategies in this field. Results on a search on Google Scholar for "Mindfulness-based interventions at work" shows more than 168.000 hits, indicating the increasing interest that this intervention strategy as awakened both in the scientific community and the mainstream audience. Well known Fortune 500 companies such as Google, Aetna, and General Mills are providing in-house mindfulness training to their workforce (Delohery, 2017). At least 250 members of the UK House of Parliament have gone through mindfulness training to explore first-hand the benefits of the practice and assess the implementation of mindfulness-based interventions in different sector of public administration (The Mindfulness Initiative, 2015). Mindfulness seems to be here to stay for the long run, and although the public interest has made it grow into a sizeable business sector that moves around 1.1$ billion dollars a year (Levin, 2017) , the scientific evidence to support this hype is still in the works.

MBIs usually adopt a group-based brief format, which makes them resource-effective in comparison to individual and self-directed strategies, and provides the opportunity of fostering

social support and meaningful connections among fellow teammates. As well, in contrast to other PPIs, mindfulness-based initiatives are effective at diminishing stress and burnout both in the short and long term (Ivandic et al., 2017; Roll et al., 2019). Furthermore, mindfulness training requires few external resources, and it's a practice that can lead to profound and lasting lifestyle changes whose positive consequences go beyond the benefits related to the working environment (Shonin, Van Gordon, Dunn, et al., 2014). These elements make MBIs suitable candidates for further exploration into their benefits for individuals, organizations, and society in general.

The rise of Mindfulness

Mindfulness has been defined as the inherent ability of the human mind to pay attention to both internal and external stimuli in the present moment with an attitude of acceptance, curiosity, and exploration (Bishop et al., 2004; Kabat-Zinn, 2017). Mindfulness as a therapeutic tool has its origins in the early 1900's when the Zen Buddhist teacher D.T Suzuki started a fruitful dialogue with prominent psychoanalysts such as Carl Jung and Erich Fromm (Harrington & Dunne, 2015). Further on in the 1970's Herbert Benson popularized the "relaxation response" as a medicalized and secular approach to meditation techniques derived from Hinduism (Benson et al., 1974). MBIs, as we know them today, originated in the University of Massachusetts Medical School in the 1980s, as a strategy to help individuals with chronic pain conditions improve their lives and better cope with stress (Kabat-Zinn, 2013). From the foundational Mindfulness-Based Stress Reduction program (MBSR), many different programs have been developed to treat specific conditions such as depression (Segal et al., 2001), personality disorders (Dimeff & Linehan, 2001), and behavioral health problems (Hayes et al., 2006). Mindfulness has grown to become a mainstream global movement that seeks to provide an answer to the most pressing issues of our time, such as the epidemic of stress at work, climate change, and the ethical crisis in political and corporate research

(Wreford & Haddock, 2019). As well, research on mindfulness has grown exponentially across the last 20 years, with approximately 1.200 papers published in peer-reviewed journals last year alone (AMRA, 2020). Unsurprisingly, the vast majority of studies focusing on the development and evaluation of MBIs in different contexts focus almost exclusively on the reduction of negative health-related outcomes such as stress and burnout (Botke et al., 2018), chronic pain (Hilton et al., 2017), and depression (Wang et al., 2018). This presents a clear bias leaning towards the reduction of adverse outcomes in detriment of exploring the potential impact of MBIs on positive aspects of wellbeing.

When it comes to MBIs at work, the situation is similar. The amount of studies reporting on negative health-related outcomes doubles those who report positive aspects of health and psychological wellbeing (Lomas et al., 2017). However, the theoretical foundations supporting the case for the positive effects of mindfulness in general (Brown & Ryan, 2003), and specifically at work (Good et al., 2016), are starting to gain a firmer base. And the preliminary evidence suggests that mindfulness can indeed support worker's wellbeing at work through different mechanisms such as facilitating the perception and appreciation of positive events and emotions, recovering faster from episodes of negative emotions, and improve our overall cognitive and executive processing functions (Davidson & Schuyler, 2015; Holzel et al., 2011). As well, the philosophical and practical foundations of mindfulness and MBIs stem from various spiritual contemplative traditions of predominantly Buddhist origin. In these traditions, the fundamental aim of mindfulness, and the specific practices to cultivate, is not only to diminish suffering but to awaken deeper wisdom and higher-order qualities of mind such as love, understanding, and compassion to foster individual and collective wellbeing and flourishing (Levey & Levey, 2018). Yet this account of mindfulness has been somewhat left out of the scientific and secular approach to the concept.

Still, research on MBIs at work is in its infancy, and there's a calling for studies focusing specifically on healthy working populations and the effects of MBIs on aspects of psychological wellbeing and optimal functioning at the individual, collective and organizational perspectives (Rosenkranz et al., 2019). Besides this central issue, there is a lack of MBIs designed and adapted specially for healthy individuals at work. And again, the majority of available MBI programs are directed toward clinical populations with varying degrees of complexity (Good et al., 2016). Thus, we can say that there are significant gaps in regard to the positive effects of mindfulness and MBIs on wellbeing, and the evidence is even more scarce for heathy working populations.

Beyond the gaps presented above, there a few other relevant issues still to be addressed in MBI research. For example, there is still little evidence regarding the effects of mindfulness training on individuals' perception of work characteristics such as workload and emotional demands that play a central role as predictors of undesirable outcomes a work (Janssen et al., 2018). Similarly, little is known about contextual factors at the workplace that may hinder or support the efficacy of MBIs as well as the specific mechanism underlying the effects mindfulness has on subjective experiences such as stress and burnout (Good et al., 2016). However, organizations that invest in deploying MBIs for their workforce might not be interested in theoretical models of mindfulness or detailed accounts of the psychological mechanism involved, and would probably choose to focus on evidence pointing to results and impact. Following this argument, this doctoral dissertation focuses on the gaps that allow for a contribution from the practical point of view, hoping to make a real-world difference and highlighting the potential of MBIs at work as a powerful yet straightforward intervention strategy that holds great promise to transform the way we work.

Challenges for research on Mindfulness-based interventions

In response to the established gaps in the scientific literature of MBIs at work, the main goal of this dissertation is to expand the research on Mindfulness and MBIs at work and its effects on workers' levels of psychological wellbeing and performance by testing for these effects on several different work-specific MBI protocols ranging from standardized content and rationale to full-on multi-component customizations.

Based on this primary goal, three key research questions are asked and grouped into three distinct research challenges that will serve as a general outline of the specific objectives of this project.

Research Challenge 1: *Can MBIs foster worker's psychological wellbeing?*

In its origins in the Buddhist tradition, mindfulness is not only about diminishing individual's suffering but also about increasing our capacity to connect with life in a meaningful and engaging way (Choi et al., 2020). And to foster wisdom and clarify personal values that allow us to act with greater compassion and sensibility (Levey & Levey, 2018). These elements are reflected in scientific definitions of both broad and work-specific psychological wellbeing and described in dimensions such as personal growth, positive relations, environmental, dedication, and absorption (Ryff & Singer, 2008; W. B. Schaufeli et al., 2002). Thus, it is surprising to see the little evidence available on the effects of mindfulness on constructs representing psychological wellbeing in comparison to the number of studies available reporting its impact on negative aspects of experience (Lomas et al., 2017).

The latest research on the neurophysiological correlates of mindfulness suggests that it can foster wellbeing in at least four different ways: 1) Reducing mind wandering and the "stickiness" of intense emotional episodes, 2) Recovering faster from negative emotional experiences, 3)

Helping individuals sustain and deepen episodes of positive emotions, and 4) Increasing empathy, altruism and pro-social behavior (Davidson & Schuyler, 2015). As well, available theoretical models suggest mindfulness training can improve an individual's sense of wellbeing by increasing their capacity to engage fully with experience regardless of the affective tone (negative or positive) fostering experiential acceptance (Lindsay & Creswell, 2016), and facilitate re-appraisal of difficult experiences that may lead to increased meaning and purpose in life (Garland, Farb, Goldin, et al., 2015a). Taken together, these ideas suggest that MBIs can have a positive effect on worker's wellbeing. But scientific evidence is still lacking in this aspect, and its currently limited to simpler conceptions of wellbeing such as job satisfaction (Hülsheger et al., 2014), or directly to constructs related to psychological wellbeing but essentially different (i.e., emotional intelligence, Lomas et al., 2017). Thus it is necessary to establish a clear link between MBIs and proper constructs measuring the full spectrum of psychological wellbeing, including hedonic and eudaimonic aspects of experience (Ryan & Deci, 2001c).

Research Challenge 2: *Can MBIs help workers increase their performance?*

Work provides individuals' the opportunity to contribute to the communities they belong to, to be of service to a meaningful cause, and to engage in daunting tasks that promote personal and professional growth. Performance can be seen as the achievement of goals that reflect these elements, as well as the established tasks that make up specific jobs supporting organizational objectives (Goodman & Svyantek, 1999). And, achieving high levels of performance while maintaining and increasing worker's levels of psychological wellbeing is the mark of a healthy and successful organization (Salanova et al., 2012; 2019).

Mindfulness can positively impact performance from at least two different perspectives. From the cognitive point of view, mindfulness increases the capacity to sustain focused attention,

which in turn may help workers focus on specific tasks with less effort and reduce the number of interruptions and potential mistakes due to distraction (Chiesa et al., 2011). As well, mindfulness training can have a positive impact in general executive processing and cognitive flexibility, which in turn may positively impact planning capabilities, information processing, and diminish cognitive biases (Hafenbrack et al., 2014; Tang et al., 2015). From an affective perspective, mindfulness help individuals become better at regulating their behavioral response to emotionally intense episodes, decrease levels of internal reactivity, and respond with calm and depth to demanding situations (Guendelman et al., 2017; Tang et al., 2015)

Moreover, mindfulness may positively impact performance indirectly through increasing levels of psychological wellbeing and work engagement. According to the happy-and-productive workers' thesis (Wright & Cropanzano, 2007), workers who experience higher levels of psychological wellbeing tend to perform better, both at the individual and collective level (Peñalver et al., 2017).

Despite these promising associations, even less attention has been given to the potential effects of mindfulness on performance in the scientific literature. Therefore, we aim to explore the potential effects of MBIs on workers' levels of performance.

Research Challenge 3: *Are work-specific MBIs effective at promoting worker's wellbeing and performance?*

Last but not least, research on the effects of MBIs as mostly focused on standardized programs initially developed for the needs and characteristics of specific clinical populations (Eby et al., 2016a). This creates a translation problem because a program designed and tailored to work

with patients suffering from chronic illnesses might not have the same effects on a group of healthy working adults. As well, the length and practice requirements of standardized MBI might be too taxing and resource-intensive both for organizations and workers. For example, MBSR is composed of eight training sessions and suggest practice intervals of different exercises starting from twenty to thirty minutes in length (Kabat-Zinn, 2013). Successful interventions in organizations require adaptation to context and the specific needs and characteristics of the workers participating in them (Nielsen & Miraglia, 2016). Simply put, one size does not fit all. Thus, our last challenge revolves around testing different MBI programs specifically tailored for the target organizations' and workers' needs, and to evaluate their efficacy on their levels of psychological wellbeing and performance.

Outline of the dissertation

The present thesis project aims to contribute to the mindfulness and MBI literature by exploring the effects of work-specific MBIs on workers' levels of psychological wellbeing and performance. We address the different elements that make up this goal, along with the different chapters. More specifically, we present an initial brief review and conceptualization of MBIs at work focusing on its positive effects (chapter 2), and four empirical studies (chapters 3, 4, 5, and 6) focusing on testing MBI interventions from different perspectives. Table 1 presents each research challenge alongside each specific chapter addressing each one of the challenges.

Table 1. Overview of Research Challenges and corresponding empirical chapters

		Chapters				
		2	3	4	5	6
Challenge 1	Can MBIs foster worker's psychological wellbeing?	**x**	**x**	**x**	**x**	**x**
Challenge 2	Can MBIs increase worker's performance?	**x**		**x**		**x**
Challenge 3	Are work-specific MBIs effective at promoting worker's wellbeing and performance?		**x**	**x**	**x**	**x**

Chapter 2 – Happy, Mindful, and Productive Workers

In this chapter, we explore the relationship between Mindfulness, Happiness, and Performance from the perspective of Positive Organizational Psychology. The aim of this chapter is to explore the state of the art of MBIs at work and the evidence on the effects of MBIs on psychological wellbeing and performance. We briefly introduce the selected concepts and their definitions, beginning with the introduction of the happy-and-productive workers thesis and revisiting the relevance of happiness and its different perspectives in developing a healthy work environment. Then we look into the role of Mindfulness and mindfulness-based interventions in promoting happiness and performance at work from a theoretical perspective, followed by a review of the most relevant scientific findings on the positive effects of mindfulness-based interventions at work. Consequently, we establish a list of practical applications and suggestions for implementing mindfulness-based initiatives at work, due to their strong relationship with

happiness and performance at work. Finally, we explore future research challenges and issues in the field of mindfulness at work.

Chapter 3 – Mindfulness Can Make You Happy and Productive

In this chapter, a controlled trial of a brief MBI based on MBCT (Segal et al., 2001) was conducted on a big Spanish public hospital. The aim was to evaluate the effects of a brief MBI on the workers' levels of different measures of wellbeing (i.e., happiness, and work engagement), and performance. The intervention program was offered to the staff as an initiative to promote the psychosocial health of workers. Nineteen employees participated in the program, which consisted of three 150-min sessions, and the other fifteen employees acted as a control group in a waiting-list format. Building on the happy-and-productive workers thesis (Wright & Cropanzano, 2007), and the different pathways of mindfulness to impact wellbeing as PPI, we expected to see significant differences on pre-post evaluations of mindfulness, work engagement, happiness and performance between participants in the MBI program and participants allocated to the control group.

Chapter 4 – Feeling happy every working day: A diary study of a Brief Mindfulness Intervention

In this chapter, we conducted a replication of the MBI program presented in the previous chapter. The aim of this chapter was to explore the effects of a brief MBI on workers' daily levels of positive emotions and absorption. Forty participants were distributed between control and intervention groups and responded to a daily questionnaire assessing their levels of positive emotions and absorption during 12 non-consecutive days. For this chapter, we change the perspective of the evaluation towards a diary study design in order to capture the patterns of change in time of two different measures of psychological wellbeing. As well, we seek to replicate the intervention effect in order to confirm the efficacy of the intervention program.

Chapter 5 – Developing a Multi-Component Positive Psychology Intervention at work:

In this study, we aimed to explore multi-component MBI PPI designs that go a step further from traditional standardized program contact and include elements from the field of positive psychology as well as work-specific customization aspects. The aim of this chapter was to explore the effects of the multi-component MBI on the workers' daily levels of different measures of psychological wellbeing (i.e., satisfaction with life, energy, and affective tone), and daily goal achievement. The intervention program was offered to the staff of a small company as an initiative to improve their wellbeing as well as their job performance. The intervention combined training in diverse positive psychological resources such as mindfulness, character strengths use, meaning-focused coping, and psychological capital development. The final participants (N= 39) were asked to fill a daily survey two times a day, at the beginning and the end of their workdays during the 16 days of intervention time. They were asked to establish daily goals at the beginning of their workday and evaluate their levels of goal achievement as well as specific levels of wellbeing at the end of the workday. We expected to see a pattern of positive change across time in participants' daily levels measures of psychological wellbeing.

Chapter 6 – Differential Effects of two MBIs at Work

In this chapter, we compare two different mindfulness-based interventions: a longer MBI based on the standardized MBCT program (Segal et al., 2001), and brief work-specific MBI. The aim was to confirm the positive effects of different types of MBIs on workers' levels of psychological wellbeing and performance, as well as to establish differences between the two programs in terms of differential effects. Both programs were deployed in a sample of white-collar workers to explore

the differential effects on different facets of participant's mindfulness, dimensions of psychological wellbeing, work engagement, performance, and stress. A total of twenty-eight participants completed one of the different programs, and their results were compared between groups and against twenty-seven participants randomly allocated to a waiting list control group. From this chapter, we expected to see finer-grained differences between the two tested MBI programs and support the case for the use of work-specific custom MBIs.

Chapter 7 – Overall Conclusions

Finally, this last chapter summarizes the key findings, conclusions, and contributions from the preceding chapters included in this thesis. In addition, the main practical implications are presented. Finally, the limitations of the studies are identified along with future avenues for research on the field of MBIs.

Chapter 2

Happy, Mindful, and Productive Workers: A brief review[1]

Abstract

In this chapter, we explore the relationship between Mindfulness, Happiness, and Performance from the perspective of Positive Organizational Psychology. First, we briefly introduce the selected concepts and their definitions, beginning with the introduction of the happy-and-productive workers thesis and revisiting the relevance of happiness and its different perspectives in developing a healthy work environment. Then we look into the role of Mindfulness and mindfulness-based interventions in promoting happiness and performance at work from a theoretical perspective, followed by a review of the most relevant scientific findings on the positive effects of mindfulness-based interventions at work. Consequently, we establish a list of practical applications and suggestions for implementing mindfulness-based initiatives at work, due to their strong relationship with happiness and performance at work. Finally, we explore future research challenges and issues in the field of mindfulness at work.

Keywords: Mindfulness, Happiness, Performance

[1] Chapter 2 has been submitted and accepted for publication as a chapter for the book "The Routledge Companion to Happiness at Work" to be published by Routledge (Taylor and Francis). https://www.routledge.com/The-Routledge-Companion-to-Happiness-at-Work-1st-Edition/Marques/p/book/9780367266554

The potential of mindfulness as a path to enhance psychological wellbeing (i.e., happiness) has been largely neglected in the scientific literature, and most of the theoretical and practical approaches to mindfulness and mindfulness-based interventions (MBIs) focus on stress reduction and emotional suppression leaving behind the traditional understanding of mindfulness as an active endeavor to engage with life's experiences and challenges as a path of personal growth (Choi et al., 2020). This chapter represents an effort to clarify the link between mindfulness and psychological wellbeing, explore the available examples of MBIs that contemplate as part of their objectives, cultivating wellbeing, and establishing basic guidelines for the development of MBI protocols at work.

Mindfulness is one of the key components of happiness, and it can be trained and developed like any other skill through sustained and diligent practice, according to both scientific and contemplative perspectives (Davidson & Schuyler, 2015; Nhat Hanh, 2006). The early roots of mindfulness stem from the ancient Buddhist tradition, and it is present in some form in many of the world's greatest spiritual traditions (Levey & Levey, 2018). But before diving into the concept of mindfulness and its role in fostering positive mental states, let's focus first on what happiness stands for in this modern world where this popular and often misunderstood word has begun to lose its meaning.

Since Martin Seligman's presidential address at the American Psychological Association Congress in 1998, the study of happiness has gained considerable momentum, occupying the spotlight in a new trend in scientific inquiry focused on the study of positive emotions, character, and positive institutions (Seligman & Csikszentmihalyi, 2014). However, happiness is a broad umbrella term with a myriad of different meanings that depend on cultural and philosophical interpretations (Diener et al., 2016).

Both social researchers and philosophers have usually addressed it from one of two main currents: the hedonic and eudaimonic perspectives (Waterman, 1993). On the one hand, hedonia refers to satisfaction with life and the presence of more positive emotions than negative ones. It can be traced back to the ancient Greek philosopher Aristippus, who taught that the ultimate goal of existence was to live as many pleasurable moments as possible (Ryan & Deci, 2001b). The hedonic perspective is represented by the research on subjective wellbeing, which is built upon two correlated components: judgments of life satisfaction (assessed from specific life domains such as work, relationships, and others) and the predominant and sustained presence of positive feelings (Diener et al., 2016). On the other hand, eudaimonia refers to the actualization of our human potential, focusing on optimal functioning, personal growth, and the presence of a strong purpose in our life project. This line of thought stems from Aristotle's teachings about making an effort to live in accordance with our true selves or "daemon" (Waterman, 1993)It is exemplified by the research on personal and professional growth (Straume & Vittersø, 2014), identification and development of character strengths and values in action (Peterson & Seligman, 2004), psychological wellbeing (Ryff & Singer, 2008), and self-actualization (Ryan & Deci, 2001b).

Additionally, more integrative conceptualizations of happiness have also included interpersonal and societal dimensions proposing that the individual human being is always embedded in specific social scenarios that have a powerful influence on individual perceptions, as well as the different temporal points of reference (past, present, and future) we can adopt when thinking about our own sense of wellbeing (Hervás & Vázquez, 2013).

Thus, we propose that happiness is a multifaceted construct that incorporates both hedonic and eudaimonic perspectives of wellbeing at the individual, collective, and societal levels of analysis.

Happy and Productive workers

The study of happiness at work has been a source of great interest and debate throughout the history of psychology and management sciences. From the first studies by Hersey (1932) reporting on the positive relationship between daily experiences of positive emotions and performance, and by Kornhauser & Sharp (1932) reporting that individual assessments of happiness are not linked to performance and efficiency, a great deal of discussion and reflection on the relevance of wellbeing at work has yielded a large amount of evidence supporting the initial case for happy and productive workers.

The happy-and-productive workers thesis is considered the "Holy Grail" of management sciences. It proposes that, with equal working conditions, workers who are "happy" with their jobs should perform better, achieve more, and feel good while doing so, compared to their co-workers who are less happy (Wright & Cropanzano, 2007). Although there is a significant amount of evidence supporting this hypothesis (Cropanzano & Wright, 2001; Zelenski et al., 2008) it has received considerable skepticism and doubt, mainly because the majority of the studies supporting it has focused on a one-sided understanding of happiness, emphasizing the hedonic perspective by using measures such as job satisfaction and positive affect (e.g., Xanthopoulou et al., 2012).

In light of this criticism, researchers have refined the happy-and-productive workers hypothesis by integrating the two complementary perspectives of wellbeing, hedonic, and eudaimonic. They differentiate pleasure and positive affect from interest and engagement as two different domains that function as two sides of the same coin. In a recent effort to incorporate an integrative approach to happiness and wellbeing at work, Peiró et al., (2019) explored the patterns of associations between different measures of happiness (incorporating both hedonic and eudaimonic perspectives) and performance. They reported that the majority of the workers

participating in the study were grouped in either the happy-unproductive or unhappy-productive quadrants. Moreover, their results suggested that workers can experience high hedonic happiness and low eudaimonic happiness simultaneously (and vice versa), and that eudemonic happiness is associated with better performance more often than hedonic happiness, thus showing the relevance of differentiating between the two perspectives. Along the same lines, Straume & Vittersø, (2012) examined how different kinds of work episodes were related to different emotional experiences that represent different perspectives of happiness. They found that work episodes perceived as complex and difficult were associated with low levels of hedonic happiness and high levels of inspiration and engagement, that is, eudaimonic happiness. Completing the whole picture, they suggested that episodes of ease and relaxation were associated with higher levels of hedonic happiness and represented a distinct domain that is not necessarily related to personal growth and skill development. Therefore, we understand that both elements are relevant and necessary in obtaining a true happy-and-productive formula. That is, workers need challenges and difficult situations that allow them to test their skills and experience personal and professional growth as well as moments of relaxation and recovery through pleasant activities that can replenish both their physical and psychological energy (Bennett et al., 2018). In a similar effort aimed at extending the happy-and-productive hypothesis, Peñalver et al., (2017) tested the relationship between positive emotions and performance at the collective level of analysis, that is, in work units and groups belonging to different organizations. They found that positive emotions fostered key group social resources such as cohesion, coordination, teamwork, and a supportive climate, which in turn boosted the groups' performance. Their results support the happy-and-productive hypothesis beyond the individual level, and they integrate new elements into the framework that enrich and explain the process embedded in the theory's pathways.

These findings shed light on the relevance of utilizing different conceptualizations and measures of happiness in a complementary way, as well as expanding the scope of analysis beyond the individual to better understand one of the basic pillars of Positive Psychology.

Mindfulness and its effects on happiness

Mindfulness, understood as the inherent ability of the human mind to pay attention to both internal and external stimuli in the present moment with an open, curious, and accepting attitude (Bishop et al., 2004; Kabat-Zinn, 2017), has burst onto the center stage as a main actor in scientific research and evidence-based practical applications. Only in 2018, there were more than 800 peer-reviewed publications on the topic, with the number continuing to rise each year (AMRA, 2019). Growing numbers of global companies are establishing the trend of making mindfulness-based interventions (MBIs) available to their workforce as a strategy to prevent stress and enhance happiness and psychological wellbeing (Good et al., 2016). MBIs are probably the most popular way of teaching mindfulness, engaging participants in meditation exercises, and other practices that help them to cultivate mindfulness like any other skill. There are various forms of well-established evidence-based standardized programs, such as mindfulness-based stress reduction (MBSR, Kabat-Zinn, 2013), mindfulness-based cognitive therapy (MBCT, (Segal et al., 2001), or acceptance and commitment therapy (ACT, Hayes et al., 2006).

However, the majority of the research and evidence-based applications of mindfulness have focused on an "extinguishing" model, emphasizing the elimination of maladaptive habits and outcomes such as stress, addictions, and behavioral problems, rather than cultivating and promoting wellbeing and healthy psychological outcomes (Coo & Salanova, 2018; Garland, Farb,

Goldin, et al., 2015b). This approach is problematic because it leaves out some of the key elements of mindfulness from its origins in the Buddhist tradition, in other words, the intentional and deliberate cultivation of positive states of mind in order to promote personal growth and transformation (Lama & Cutler, 1998; Ricard, 2003).

Despite the explicit bias toward remediating negative outcomes, there is a growing body of evidence supporting the positive psychological effects of mindfulness interventions on the individuals who participate in different kinds of MBIs. For example, Brown & Ryan, (2003) found that mindfulness is positively and significantly correlated with measures of both hedonic and eudaimonic happiness and that on a daily basis having stronger and more frequent episodes of "being mindful" predicted more intense and frequent episodes of positive affect (hedonic happiness). In the same direction, participants in an MBI that focused on cognitive psychology and dealing with depressive symptomatology experienced increased levels of positive emotions after participating in the program (Geschwind et al., 2011).

Regarding the integration of both hedonic and eudaimonic dimensions of happiness, Hanley et al., (2014) found that individual mindfulness conceptualized as a trait was positively related to both dimensions of happiness and that long-term practitioners of contemplative disciplines that encourage the development of mindfulness tend to experience higher levels of both hedonic and eudaimonic happiness. In addition, Garland, Farb, Goldin, et al., (2015b) proposed that mindfulness as a process enhances both dimensions of happiness by facilitating the re-appraisal of adverse situations and improving the savoring of positive experiences, thus building a greater capacity to find meaning under challenging events and engage with our own lives in a more positive way. Later on, they supported these claims with evidence suggesting that mindfulness training promotes upward spirals of both positive affect and cognition (Garland, Geschwind,

Peeters, et al., 2015) as well as more frequent use of positive reappraisal, which promotes mindfulness practice, completing the upward spiral (Garland et al., 2016)They called this proposal the "Mindfulness-to-Meaning Theory" (Garland, Farb, Goldin, et al., 2015), which posits that by changing the way one pays attention to mental, emotional, and physical aspects of experience, mindfulness stimulates and enhances the natural human ability to re-interpret adverse events and discover and savor the positive elements still present in those moments. By cultivating positive re-interpretations and positive emotions, mindfulness establishes fertile soil for the construction of eudaimonic experiences that foster meaning, post-traumatic growth, resilience, and engagement with personal values and a well-lived life.

In light of this evidence, we can say that the relationship between mindfulness and happiness is somewhat well established in both theoretical and empirical terms. But what about MBIs at work?

Mindfulness-based interventions at work- effects on Happiness and Performance

MBIs at work are on the rise, and there is promising initial evidence of their efficacy as a practical, evidence-based strategy to promote psychosocial health, happiness, and performance at work (Bartlett et al., 2019). The benefits of cultivating mindfulness at work range from reducing stress and depressive symptoms to enhancing different aspects of happiness, social relations, and even job performance (Good et al., 2016). Considering that approximately 40% of the adult workforce in the western world experience some form of stress at work, and roughly 10% of the same population will experience stress-derived health complications (Eurofund, 2018; Saad, 2017) the surge of interest in MBIs at work opens up a hopeful and optimistic opportunity to remedy this great affliction, described by the World Health Organizations as one of the main challenges at the beginning of the 21st century (WHO, 2005). Moreover, the development and evaluation of

soundly-conducted MBIs at work may be an interesting approach to not only ameliorate work-related stress and its associated negative outcomes, but also to cultivate happiness and to thrive in a meaningful and lasting way that positively impacts society at its core through the organizations that symbolize one of its most relevant building blocks (Huppert & So, 2013)

MBIs at work have been positively associated with at least 31 different measures of wellbeing and/or performance in a recent systematic review of quasi-experimental field studies and randomized-controlled studies (Lomas et al., 2017). In the following paragraphs, we will summarize the most relevant findings from intervention evaluation studies supporting the efficacy of MBIs at work as meaningful, evidence-based strategies to promote happiness and performance at work, focusing on positive outcomes. The reviewed studies are gathered and presented in Table 1. To begin with, Shonin et al. (2014) conducted an eight-week long MBI for office-based middle managers (N=152), and they found that, after completing the intervention program, participants reported higher levels of job satisfaction and performance rated by their employers. In a similar fashion, Kersemaekers et al. (2018) designed a specific workplace mindfulness training and deployed it in four different companies (N=425 workers). Participants reported increased levels of positive emotions, better team climate, and increased productivity up to a month after participating in the program.

In smaller-scale studies, Chin et al., (2019) reported that sixty workers from a digital marketing firm who participated in a six-week MBI delivered through a combination of group and individual meetings, as well as video classes, experienced positive affect more frequently and coped better with stress throughout their workday. Along the same lines, Hülsheger et al., (2013) showed that participants from a wide range of occupations (N=64 workers) who undertook a two-week mindfulness self-training via a smartphone app reported higher levels of job satisfaction and

lower levels of emotional exhaustion than the participants in the waiting list control group during the training period. In another study conducted by Aikens et al., (2014)at a multinational company, participants (N=44 workers) in an eight-week online MBI reported higher levels of resiliency and vigor than the participants allocated to a waiting list control group up to six months after finishing the training program. Last but not least, the authors of this chapter (Coo & Salanova, 2018) found that healthcare professionals (N=19 workers) who participated in a three-week MBI reported increased levels of happiness, work engagement, and job performance upon finishing the intervention program.

Beyond the scope of interventions and experimental studies, there are some findings worthy of notice. In a recent study, Leroy et al. (2013) examined an eight-week MBI program deployed in different organizations and teams to explore the relationship between mindfulness and work engagement. They found that authenticity and authentic behavior mediated the dynamic relationship between mindfulness and work engagement, which means that the progressive growth of mindfulness practice over time positively impacts work engagement through the clarification of personal values and sense of self, and by consistently acting in accordance with them. From a different approach, Malinowski & Lim (2015) examined the relationship between mindfulness, work engagement, and happiness from a theoretical perspective. They found that mindfulness is positively related to both work engagement and happiness through the mediation of positive job-related affect, hope, optimism, and self-efficacy, which means that mindfulness training shows promising potential to improve happiness at work via more frequent experiences of positive emotions at work and the development of psychological capital. Other findings worth noting in the area of theoretical associations present scientific evidence supporting positive associations between mindfulness and workers' and supervisors' job performance (Dane & Brummel, 2013;

Reb et al., 2013, 2014), academic performance and GPA (Shao & Skarlicki, 2009), and safety behaviors in risky work environments (Zhang & Wu, 2014).

All of these results provide a solid working base supporting the positive healthy effects of MBIs at work. The reported outcomes address both hedonic (i.e., job satisfaction, positive affect, and positive emotions) and eudaimonic (i.e., engagement, vigor, self-efficacy) aspects of happiness.

In addition to the studies mentioned, a large body of evidence supporting the case for MBIs as an effective strategy to reduce negative outcomes, such as stress and burnout, has been well-documented and reviewed in various meta-analytical studies (Eberth & Sedlmeier, 2012; Heckenberg et al., 2018; Khoury et al., 2015a; Mesmer-Magnus et al., 2017). Considering both perspectives, healthy (promoting positive outcomes), and extinguishing (reducing negative outcomes), we can say that MBIs are a sound evidence-based strategy for the promotion of wellbeing from an integral approach that effectively deals with both aspects.

Table 1: MBIs at work evaluation articles and authors, target population and reported effects on happiness and performance measures

Article and Authors	Target Population	Reported Effects
• Shonin, Van Gordon, Dunn, Singh, & Griffiths (2014)	• Office-based middle managers in different organizations (N=152)	• Higher levels of job satisfaction and performance rated by their employers
• Kersemaekers, Rupprecht, Wittmann, & Tamdjidi (2018)	• Office-based workers in different organizations (N=425)	• Increased levels positive emotions, better team climate and increased productivity
• Chin, Slutsky, Raye, & Creswell (2019)	• Workers from a digital marketing firm (N=60)	• More frequent positive emotions and better stress coping throughout their workday
• Hülsheger, Alberts, Feinholdt, & Lang (2013)	• Workers from a broad range of occupations (N=64)	• Higher levels of job satisfaction and lower levels of emotional exhaustion
• Aikens et al., (2014)	• Office-based workers at chemical firm (N=44)	• Higher levels of resiliency and vigor
• Coo & Salanova, 2018	• Healthcare professionals (N=18)	• Increased levels of happiness, work engagement, and job performance

In the next section, we address practical applications and suggestions for the implementation of MBIs at work.

Happy, Mindful and Productive Workers: practical applications and suggestions

Up to this point, scientific evidence supports the use of MBIs as increasingly useful and effective strategies to promote psychosocial health and wellbeing at work. In order to coherently integrate MBIs in the many different processes that make up the complex activity of managing an organization, it is necessary, to begin with, an established set of principles and ideas. This is where the Healthy and Resilient Organizations Model (HERO, Salanova, Llorens, Cifre, & Martinez, 2012) comes into play. The HERO model is a heuristic management model that proposes that, in order to achieve excellent performance and financial results in a sustainable manner, organizations need to engage in systematic, planned, and sustained actions to promote their workers' psychosocial health and wellbeing. One of the most relevant ways to achieve this is through healthy organizational practices and interventions, such as mindfulness training for employees and leaders (Salanova, Llorens, Acosta, & Torrente, 2013; Salanova, Llorens & Martínez, 2019). In this regard, the HERO model could be a useful framework to facilitate the integration of mindfulness training into the flow of HR training needs detection and planning.

From a complementary perspective, it is also relevant to point out that MBIs are a cost-effective strategy to address chronic stress-related ailments such as depressive symptoms and relapse (Kuyken et al., 2015) and back pain (Herman et al., 2017) in clinical populations. Taking into account that the estimated costs derived from work-related stress issues range

from 70 billion USD per year, according to the most conservative estimations in the UK, to 300 billion US dollars per year, according to the most inclusive estimations in the USA (EU-OSHA, 2014), it is likely that MBIs at work are a good investment, not only in terms of workers' psychosocial health and wellbeing but also in terms of firms' financial performance.

However, it is necessary to address certain points in order to ensure proper implementation and maximize the probability of success when delivering MBIs at work. It is clear that MBIs can be implemented in a variety of platforms and formats (Hülsheger et al., 2013; Kersemaekers et al., 2018; Wolever et al., 2012) in order to fit the particular characteristics and needs of each organization. Thus, it is important to establish a clear and strong alignment with the organization's specific challenges, goals, and core values, and be familiar with the aspects of organizational culture that make each organization unique (Rupprecht et al., 2019). Following this idea, perhaps the most relevant aspect of MBI implementation is promoting mindfulness at work for the right reasons, that is, understanding that it is not a panacea that will miraculously turn every person into a happy, productive, and compliant employee. It is extremely important to address the underlying structural causes of stress and allowing for space and time to develop a solid practical foundation that will have a sustained positive impact on overall employee wellbeing. Accordingly, shorter versions of different standardized MBIs serve as a good starting point to introduce mindfulness practice as a relevant resource (Hülsheger, 2015), but sustained practice and integration into daily routines is the only way to ensure lasting positive effects (Kabat-Zinn, 2017).

From the perspective of practitioners and mindfulness teachers, it is important to adhere to good practice guidelines, ensuring that ethical and quality standards are met. Upholding quality standards is a necessary baseline condition to advance in the field of high quality and

rigorous scientific evidence and professional practice. Moreover, the use of existing tools to evaluate program fidelity, adherence, and teaching competence is highly recommended (Crane & Kuyken, 2019).

Another important aspect to pay attention to is the fact that mindfulness can be understood and developed as a multilevel intervention. This means that both researchers and practitioners should not only aim to implement processes focused on developing mindfulness as an individual practice and resource, but they should also include the collective (team, unit, area) and organizational perspectives as well, working alongside team and area managers to develop policies and healthy organizational practices and policies that actively support the inclusion of mindfulness as a widely available resource included in daily activities and social interaction situations. The integration of different intervention levels can be a sound strategy to promote effective training transfer to work-related daily activities because it encourages the inclusion and practice of individual skills and resources in tasks and processes carried out at the level of teams and groups. It also supports these interactions with explicit policies and resources such as dedicated space and time to engage in both individual and collective practice.

In terms of specific practical applications, we acknowledge that mindfulness training at work can be beneficial to HR Managers and policymakers in the following ways:

- Mindfulness training can be an effective strategy to promote happiness, increase performance, and ameliorate stress at work.
- MBIs should be aligned with each organization's core values and vision and mission statement to facilitate the integration of mindfulness into the organizational culture.

- MBIs should consistently be deployed across all levels of the organization, emphasizing the critical role of leaders and managers in the adoption, development, and integration of mindfulness-based practices into team and area processes and customs.
- MBIs should not be seen as a panacea or an easy way to deal with relevant organizational challenges that often require seeking the underlying causes of complex problems rather than sticking to superficial and symptomatic interpretations.
- It is highly recommended to look for certified teachers and trainers who adhere to their selected MBI expertise training standards and evaluate the implementation process as well as the desired outcomes of the intervention project.

Challenges and Future Research Questions

Having addressed the theoretical and empirical evidence supporting MBIs at work to promote employee wellbeing from a health perspective, it is time to consider the challenges and questions the future holds.

Perhaps one of the most important open fields when it comes to the development of MBIs at work has to do with going beyond the individual scope of training and skill development and starting to integrate and analyze social and organizational dimensions into the research and implementation process. There is mixed evidence about the social effects of mindfulness. Some evidence points in the direction of great benefits in terms of prosocial behaviors and improved social relationships(Berry et al., 2018; Montes-Maroto et al., 2018),

whereas other sources point out that the social impact of mindfulness practices is rather weak and/or affected by publication bias (Kreplin et al., 2018).

Nevertheless, one of the main teaching points in popular MBIs such as Mindfulness-Based Stress Reduction (MBSR, Kabat-Zinn, 1990) is to shift the excessive focus on oneself towards others and balance the search for personal wellbeing with the search for the wellbeing of others through the cultivation of loving-kindness and compassion (Gilbert, 2019). The potential is definitely there, and questions are beginning to arise from the existing body of evidence, such as what the role of mindfulness is in work teams and organizations (Yu & Zellmer-bruhn, 2018); what kinds of organizational environments and cultures foster the appearance of pro-social behaviors and social climates stemming from mindfulness practice (Lawrie et al., 2018); and what roles are played by mindfulness and compassionate leadership, as well as their potential impact on different organizational factors (Reb et al., 2014). Thus, one of the main challenges is to extend mindfulness research beyond individual benefits and outcomes toward social and systemic perspectives.

The second avenue of challenges and questions has to do with the development of sound theoretical models that integrate mindfulness with different work-related frameworks and factors, focusing on their interactions. From this perspective, it is extremely relevant to develop well-designed multilevel studies incorporating collective and organizational levels of analysis. This will allow for a better understanding of mindfulness in the organizational context and the necessary conditions for its development, in addition to identifying possible undesired effects and pitfalls derived from counterintuitive findings (Rupprecht et al., 2019).

A third avenue has to do with understanding the context and specificity when developing and implementing MBIs at work or answering the question of what works for

whom in what circumstances (Nielsen & Miraglia, 2016). The same solution does not work for everyone, and this is particularly true when it comes to organizations that come in all kinds of colors and sizes. Distinct cultural aspects, working conditions, and specific industries require a tailored approach that is able to clearly identify the overarching common principles of successful intervention processes and distinguish them from the factors that need special attention to be properly contextualized. An MBI for healthcare professionals working in a hospital will be quite different from an MBI for factory workers in a car manufacturing firm, despite the evident common ground in terms of the content and rationale of the selected intervention program.

A fourth avenue has to do with developing high-standard random controlled trials to evaluate the effects of MBIs at work. This includes comparing different program lengths, employing active control groups, and evaluating interventions effects by means of ecological momentary assessment tools and objective measures to identify underlying mechanisms accounting for positive effects.

A fifth avenue has to do with developing and validating adaptations of standardized MBIs to working populations. Most, if not all, of the widely popular standardized MBI programs, were originally developed according to the needs and reality of clinical populations. This is problematic because the needs and characteristics of healthy populations are quite different. Thus, it is necessary to make an effort in terms of the translation and adaptation of original MBI programs to the characteristics of the working environment and the specific needs of different collectives of workers.

The sixth and final avenue is aimed at exploring the sustainability of MBIs' effects over time. The majority of the available studies fail to explore the long-term effects of

participating in MBIs and incorporating mindfulness practices at work as a routine task (Lomas et al., 2017). Thus, we still do not have empirical evidence about this topic, and the question of long-term effects remains open. Using a more fine-grained approach, more specific questions arise, such as: What is the right length and frequency of an MBI? Can the same programs be repeated with innovative variations and mixtures? Finding answers to these questions is extremely relevant for successful implementation on a larger scale (E. Gilbert et al., 2018).

Final Thoughts

Throughout this chapter, we have briefly explored a scientific approach to happiness and wellbeing at work from the perspective of mindfulness, understanding it to be one of many valid strategies to foster these elements in all kinds of organizations and help them address the many challenges they face.

Perhaps one of the most relevant and transversal aspects of mindfulness and MBIs is the fact that they can become a facilitator component of any kind of organizational training and learning strategy because they develop and enhance essential psychological processes such as attention and self-regulation, which can have a profound impact on many different practical applications (Saks & Gruman, 2015).

In addition, it is extremely relevant to explore the effects mindful organizations may have on their extended environment and society as a whole. The potential to embody a psychological and behavioral transformation capable of addressing the biggest challenges humanity has to face is there, and we just need the right mindset and attitude to make it come

true. Mindfulness can truly be the gateway that connects us with our best possible self, individually and collectively.

Last but not least, the exploration of paths through which mindfulness may promote health, resiliency, and wellbeing at work is a field of science still in its infancy. Its great promise might be realized if we diligently continue to cultivate discovery by means of rigorous scientific research, meaningful dialogue with ancient contemplative traditions of wisdom, and sound and ethically deployed practical implementations in the world of organizations.

Chapter 3

Mindfulness Can Make You Happy and Productive: A Mindfulness Controlled Trial and Its Effects on Happiness, Work Engagement and Performance[2]

Abstract

A controlled trial of a Mindfulness Based Intervention (MBI) was conducted on a big Spanish public hospital. The intervention program was offered to the staff as an initiative to promote psychosocial health of workers. Nineteen employees participated of the program, which consisted in three 150-min sessions and other fifteen employees acted as a control group in a waiting-list format. Pre–Post evaluations of Mindfulness, Work Engagement, Happiness and Performance where taken and the data analysis suggests that the intervention program was successful in boosting the existing levels of all the evaluated variables. The practical implications of these findings suggest that shorter versions of traditional MBI programs could be an effective Healthy Organizational Practice to boost happiness and performance among healthcare professionals.

Keywords: Mindfulness, Work engagement, Happiness, Performance

[2] Chapter 3 has been published as: Coo, C., Salanova, M. (2018). Mindfulness Can Make You Happy-and-Productive: A Mindfulness Controlled Trial and Its Effects on Happiness, Work Engagement and Performance. *Journal of Happiness Studies,* **19,** 1691–1711 https://doi.org/10.1007/s10902-017-9892-8

In the past 40 years, Mindfulness – defined as a form of awareness that stems from attending to the present moment in a non-judgmental and accepting manner (Bishop et al., 2004) - has become a strong field of knowledge development in diverse settings, such as public and occupational health, education, and organizational development.

In fact, there is a growing consensus about mindfulness meditation as an effective treatment for a wide range of somatic illnesses and psychological disorders (Arias, Steinberg, Banga, & Trestman, 2006; Chiesa & Serretti, 2011; Hofmann, Sawyer, Witt, & Oh, 2010; Shonin, Van Gordon, & Griffiths, 2013). However, little attention has been paid to Mindfulness-Based Interventions (MBIs) possibilities as tools to promote healthy and positive outcomes, rather than just to reduce negative outcomes, even though the research indicates that mindfulness is positively related to constructs such as vitality, life satisfaction, and interpersonal relationship quality (Brown, Ryan, & Creswell, 2007; Glomb, Duffy, Bono, & Yang, 2011). Indeed, most scientific models of mindfulness offer a primarily extinguishing account of the way mindfulness functions, focusing on the extinction of maladaptive habits and disengagement from negative states of mind, rather than on the cultivation of adaptive behavior and positive states of mind (Garland, Farb, Goldin, & Fredrickson, 2015a). Thus, there is a significant gap in the scientific literature about the potential positive effects of Mindfulness.

Specifically, research has shown that mindfulness is positively related to work engagement, defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (W. Schaufeli & Salanova, 2011), through the employee's authentic functioning and positive affect (Leroy et al., 2013). These findings echo

the Happy-and-Productive worker hypothesis explored by many authors (for a review, see Cropanzano & Wright, 2001; Wright, Cropanzano, Denney, & Moline, 2002). Several studies carried out recently have reported findings that confirm the existence of a link between happiness, operationalized as well-being (a construct that includes positive affect in a broader model), and job performance (Cropanzano & Wright, 2001; Zelenski, Murphy, & Jenkins, 2008).

In spite of the strong potential of mindfulness in the workplace, the happy-and-productive worker hypothesis, and MBIs' possibilities as an effective practice to promote organizational health and well-being, only two controlled trials have explored the effects of mindfulness training at work (Shonin, Van Gordon, Dunn, Singh, & Griffiths, 2014; Hülsheger, Alberts, Feinholdt, & Lang, 2013). Therefore, the aim of this study is to conduct a controlled trial of an MBI in order to observe its effects on positive outcomes such as happiness, work engagement, and job performance. A secondary objective of this research is to test the efficacy of a shorter version of an MBI because many organizations do not have the time and resources to implement a classic 8-week program.

Mindfulness as a Positive Psychology Intervention

Both Mindfulness and Positive Psychology are relatively new research areas that are rooted in ancient wisdom traditions. On the one hand, Positive Psychology stems from ancient Greek Philosophy and the reflections of Aristippus and Aristotle about the different perspectives on well-being (Ryan & Deci, 2001). On the other hand, contemporary Mindfulness practices come from different Buddhist Contemplative Traditions, such as Vipassana and Mahayana (Kornfield, 2011). Similarly, there has been an incredible increase in the quantity and quality of research in both fields of inquiry (Black, 2010; Stewart I Donaldson et al., 2015). More

importantly, both views promote the idea of overcoming suffering and languishing in the service of a "life well lived" (Seligman & Csikszentmihalyi, 2014) and the pursuit of an optimal way of being or "genuine happiness" (Ricard, 2010; Seligman et al., 2005).

Positive Psychology is a field of psychological science that focuses on the study and observation of positively deviated behaviors, outcomes, and processes at the individual, collective, and societal levels of analysis (Seligman & Csikszentmihalyi, 2014). Positive Psychology shares a common goal with Mindfulness, based on the idea of developing and increasing skills and tools to promote wellbeing and optimal human functioning. The science of positive psychology is able to propose rigorously tested, meaningful, and sustainable ways to enhance wellbeing that would offer real-world happiness seekers a more rewarding and effective experience of helping themselves (Howells et al., 2014).

Mindfulness can be defined as a form of awareness that arises from attending to the present moment in a non-judgmental and accepting manner (Bishop et al., 2004). Whether mindfulness is a stable trait for some individuals or a momentary state for others, it is an inherently human quality that can be developed so that individuals can bring quality to the way they attend to thoughts, actions, and emotional states (Mellor et al., 2016). Research has shown that mindfulness is subject to being developed through specific training (Shapiro & Izett, 2008). Several studies in the field of cognitive neuropsychology have shown that engaging in as little as ten minutes of daily practice generates structural changes in regions of the brain associated with executive information processing, attention, and self-regulation (Holzel et al., 2011; Lutz et al., 2007)

Buddhism clearly and strongly endorses "the cultivation of happiness, the genuine inner transformation by deliberately selecting and focusing on positive mental states" (Lama & Cutler, 1998, pp. 44–45). In Buddhism, mindfulness is only one aspect of a broader

Eightfold Path designed to transform destructive thoughts and behaviors into virtuous ones and promote joy and equanimity (Rahula, 1959). Among the factors of the Eightfold Path, Right Effort (sammappadhana) is defined as the will to prevent and remove negative states of mind and generate and sustain positive mental states (Rahula, 1959). Thus, mindfulness practice was originally intended to strengthen mental capacities in order to disrupt negative states and cultivate positive psychological processes, rather than sustaining an affectively neutral state (Garland et al., 2015). This cognitive skill (Bishop et al., 2004; Dahl et al., 2015) serves as the foundation for cultivating higher-order qualities of mind such as compassion, equanimity, joy, and love. Traditional Buddhist teachings point out that these qualities of mind are the vehicles to overcoming suffering, and that they are clear, scientific, and applicable (Nhat Hahn, 2006).

The majority of the scientific models of mindfulness offer an extinguishing account of how mindfulness works, focusing on getting rid of maladaptive habits and disengaging from negative states of mind, rather than cultivating adaptive behavior and positive states of mind (Garland et al., 2015a). Consequently, the majority of MBIs have focused on the relief of negative symptoms and conditions such as stress, burnout, chronic pain, and addiction relapse (Arias et al., 2006). In doing so, they have left out one of the main aspects of Mindfulness training from the Buddhist tradition perspective: cultivating higher-order qualities of mind through the practice of focused attention and open awareness, by considering elements such as compassion, equanimity, joy, and kindness as simple outcomes, rather than key elements, of the practice (Naht Hahn, 2006). Taking this into account, the combination of Mindfulness and Positive Psychology seems to be the logical path for the integration of two disciplines that share essential goals and values.

Positive Consequences of Mindfulness at Work

Mindfulness and Happiness

Studies have shown that mindfulness promotes both hedonic (Brown & Cordon, 2009) and eudaimonic well-being (Brown et al., 2007). Hedonic well-being is associated with pain relief and increased pleasure; eudaimonic well-being stands for living a meaningful, self-realized, and fully functional life (Ivtzan et al., 2016). Despite the focus on deficit reduction, MBIs have also led to improvements in positive variables, such as positive affect (Geschwind et al., 2011), cognitive functioning (Hölzel et al., 2011), positive reappraisal of thoughts (Hanley & Garland 2014), and improved interpersonal interactions (Goleman, 2006).

Garland et al. (2015a) proposed the Mindfulness-To-Meaning theory in order to clarify potential paths through which mindfulness practice enhances positive variables, mainly eudaimonic well-being. The theory posits that mindfulness facilitates positive reappraisal because it evokes a decentered mode of awareness where thoughts and emotions are viewed from a metacognitive perspective—allowing for the flexible construction of more adaptive appraisals. By mindfully accepting experiences instead of dwelling on them, cognitive resources are freed up to broaden the scope of attention to encompass pleasurable and meaningful events and, therefore, build motivation toward purposeful engagement with life (Garland et al., 2015a). Empirical articles aimed at providing evidence for the Mindfulness to meaning theory have found that Mindfulness training stimulates an upward spiral of positive affect and cognition, which are key elements of well-being (Garland et al., 2015b). Furthermore, increases in trait Mindfulness have been associated with more frequent use of positive reappraisal (Garland, Kiken, Faurot, Palsson, & Gaylord, 2016).

Empirical research conducted to date supports the role of mindfulness in happiness, operationalized as well-being. Ivtzan et al. (2016) conducted a Positive Mindfulness Intervention randomized controlled trial (RCT) that integrated mindfulness with a series of positive psychology variables that effectively increased participants' happiness, operationalized as wellbeing, compared to controls. In this case, wellbeing was assessed through the Pemberton Happiness Index (PHI, Hervás & Vázquez, 2013), an integrative measure of well-being that includes items related to different domains of remembered well-being (general, hedonic, eudaimonic, and social well-being) and experienced well-being (i.e., positive and negative emotional events that happened the day before). Using trait measures of mindfulness, significant correlations have been found with a variety of cognitive and affective indicators of mental health and happiness. Mindfulness may facilitate happiness directly by adding clarity and vividness to current experience and encouraging closer, moment-to-moment, sensory contact with life, that is, without dense filtering of experience through discriminatory thought (Brown & Ryan, 2003). Trait Mindfulness has been associated with lower levels of emotional disturbance (e.g., depressive symptoms, anxiety, and stress), higher levels of subjective well-being (lower negative affect, higher positive affect, and satisfaction with life), and higher levels of eudemonic well- being (e.g., vitality, self-actualization) (Brown & Ryan, 2003; Carlson & Brown, 2005). Moreover, people with high levels of this construct are better equipped to recognize, manage, and resolve day-to-day problems, which promotes a healthy mind (Hollis-Walker & Colosimo, 2011).

Moreover, Mindfulness has been associated with a more adaptive appraisal of stressful situations (Wolever et al., 2012), promoting better emotion regulation (Hülsheger et al., 2013), work-family balance (Allen & Kiburz, 2012), and sleep quality (Hülsheger et al., 2013). It also produces increases in positive emotions, which, in turn, lead to increases in a

wide range of personal resources and life satisfaction (Barbara L Fredrickson et al., 2008). Finally, Mindfulness meditation frequency has been shown to be a great predictor of well-being, measured with the PHI questionnaire, which considers well-being to be a construct with multiple domains (general, hedonic, eudemonic, and social well-being, as well as positive and negative affect). The PHI also relates positively to the Five Facet Mindfulness Questionnaire (FFMQ) facet of Observing, as well as the attitude of Self Compassion, both significant outcomes of sustained practice (Campos et al., 2015; Schoormans & Nyklicek, 2011).

Considering all the empirical evidence provided, it is feasible to consider happiness, operationalized as well-being, as an outcome of mindfulness training.

Mindfulness and Work Engagement

When employees are engaged in their work, they are highly energetic, enthusiastic, and fully immersed in their jobs (Schaufeli & Bakker, 2004; Schaufeli et al., 2002). Having and maintaining this state of mind is an important indicator of employee well-being (Bakker & Demerouti, 2008), and it enhances the occurrence of behaviors known to promote efficient organizational functioning (Rich et al., 2010). According to Rich et al., (2010), engaged individuals can be described as being fully immersed in the activities they are doing. Mindfulness is positively related to work engagement by enhancing this experience of being immersed and attentive. Receptive attention increases the clarity and vividness of one's experiences, so that individuals become more engrossed and positively engaged in their activities (Brown & Ryan, 2003).

On the same path, Kahn (1992) argued that personal engagement in work is a function of being psychologically present at work. Psychological presence is similar to mindfulness in that it reflects whether individuals are "fully there" in the present moment, open, attentive, and aware. Psychological presence is positively related to work engagement because individuals who are more present in their work roles experience more personal engagement (Kahn, 1990). In addition to greater immersion in activities, mindfulness can also foster engagement by helping individuals to see existing activities in novel and more interesting ways, based on the idea of the "beginner's mind," one of the core elements of Mindfulness practice, thus promoting a heightened state of involvement and wakefulness in these activities (Langer & Moldoveanu, 2000).

Mindfulness can be instrumental in shifting one's perspective or "re-perceiving" what is already known (Carmody et al., 2009; S. L. Shapiro et al., 2006), thus keeping employees interested, attentive, and involved in their work. To understand how this may work, imagine engaging in what you consider to be a work-related activity, but approach it as if you were doing it for the first time: being receptive and attentive to see what this activity has to offer. This open awareness may lead you to discover new and interesting aspects of the task that were not as "clear" to you before. As the Greek philosopher Heraclitus said "You can't step in the same river twice". As a result, you may feel more engaged in the activity.

Furthermore, Mindfulness has been positively associated with work engagement through the mediation of the psychological construct of "authentic functioning", defined as being aware of one's self and regulating oneself accordingly (Avolio & Gardner, 2005). Work engagement is dependent on people investing in their "true selves" in their work (Kahn, 1990, 1992). Therefore, by supporting the individual's authentic functioning, mindfulness promotes

work engagement. Mindfulness helps individuals to make the conscious decision to engage in work-related activities, thus internalizing external role demands within their core sense of self (Weinstein et al., 2009). Authentic functioning describes this process of internalization by stating that authentic people are both open and humble, expressing their true selves, but willing to adapt at the same time (Leroy et al., 2013).

Mindfulness and Performance

A recent meta-analysis gathered different random controlled trials of MBIs performed in clinical populations using measures of cognitive capabilities. Results suggest that early phases of mindfulness training, which are more concerned with the development of focused attention, could be associated with significant improvements in selective and executive attention. However, the following phases, which are characterized by open monitoring of internal and external stimuli, could be mainly associated with improved, unfocused, sustained attention abilities (Chiesa & Serretti, 2011). These claims are supported by the findings of Zeidan et al., (2010), who indicate that brief mindfulness training significantly improves visuospatial processing, working memory, and executive functioning, compared to a control group that listened to a recorded book.

All these improvements in basic cognitive abilities are potential antecedents for improved performance at work, where focusing one's attention and making complex decisions while taking many factors into account are key behaviors (Goleman, 2013). For instance, the ability to sustain focused attention over longer periods of time would probably positively impact the overall productivity of office workers. It would help them to complete their desired number of daily tasks in a shorter time span with fewer interruptions and errors, thus providing the opportunity to achieve the same goals and spend fewer working hours on

them. In addition, the ability to take many different factors into account in complex decision making would be likely to increase the efficacy and positive impact of these decisions. As the scope broadens when considering different elements in key decisions, the person becomes more likely to tackle potential difficulties and setbacks in advance.

A recently conducted study evaluating the potential of awareness training through mindfulness meditation showed significant increases in employer-rated job performance in a medium-sized sample of middle managers. These results suggest that mindfulness-based (i.e., present-moment-focused) working styles may be more effective than goal-based (i.e., future-orientated) working styles (Shonin, Van Gordon, & Griffiths, 2014). In a similar way, Reb et al. (2015) established a strong connection between awareness, absent-mindedness, and work performance. The measures were significantly related to emotional exhaustion, job satisfaction, need satisfaction, task performance, organizational citizenship behaviors (OCBs), and deviance. It is worth noting that all three measures of performance (task performance, OCBs, and deviance) were rated by the employees' supervisors, rather than by the employees themselves.

Hypotheses

Based on the above, we formulate the following hypothesis:

H1: Participants who complete the intervention program will exhibit statistically significant increases in their levels of Mindfulness, Happiness, Work Engagement, and Performance, compared to participants in the control group.

Method

Participants and procedure

The study was conducted at a large semi-public Spanish hospital. All the employees were invited (approximately 1.500 individuals) to participate in the workshop through the Human Resources internal on-line training platform. The participants were informed about the nature of the study and given the first evaluation at the beginning of the first session. The study was described as a scientific program about the "benefits of mindfulness for managing work stress". The participants were told that the study would be conducted by university researchers, that the results would be confidential, and that the choice of whether to participate or not would affect their standing with their employer. Participation was completely voluntary, and individuals were not rewarded for their involvement in the study.

Two successive calls to participate in the study were held. In the first call, 11 individuals (100% women) attended the first session, and all of them completed the intervention program. In the second call, 10 individuals attended the first session (80% women), but two dropped out after the second session. Additionally, 15 individuals (60% women) were assigned to a control group in a waiting list format based on the time of soliciting inscription in the course. The term "waiting list" refers to a group of participants included in the outcome study who are assigned to a waiting list and receive the intervention after the active treatment group. This control group served as an untreated comparison group during the study. All the control group members participated in the intervention program after the study was over. Baseline demographic characteristics for each group are shown in Table 4.

The Hospital supported the study by allowing the participants to attend the sessions during work hours without losing pay, and by validating the intervention as a professional training activity.

Mindfulness Program Description

The program was titled "Stress Management and Wellbeing promotion for Health Professionals", and it was developed by the Hospital's HR Manager as an adaptation of Mark William's Mindfulness-Based Cognitive Therapy (MBCT). The program was validated by Spain's national commission for job training activities.

The participants attended three 150-minute sessions and received a CD containing guided meditations to facilitate daily self-practice. Weekly sessions were structured considering three different components: (I) A taught/presentation component (approximately 60 minutes), (II) a facilitated group discussion component (approximately 60 minutes), and a guided meditation and/or mindfulness exercise (approximately 30 minutes). A short break (5-10 minutes) was always scheduled before the guided meditation practice. The participants were encouraged to develop both formal and informal mindfulness practice through follow up worksheets and suggested reading materials. The workshop was guided by the Hospital's HR Manager, who had received prior training as a Mindfulness teacher. To complete the workshop, the participants had to attend all three sessions. The specific session contents and structure are presented in Table 4.

At the beginning of the first session, the participants filled out the initial questionnaire. After the last session, the participants received the final questionnaire via e-mail and answered within the following week.

Table 1: Specific session content and structure

Session N°	Rationale	Structure	Homework
1	• Recognizing the tendency to be on automatic pilot. • Commitment to learning how to step out of it. • Practice in purposefully moving attention round the body.	• Class Orientation (Welcome, Format, Intentions) • Ground Rules • Introductions • Raisin exercise (Eating Meditation) • Body scan	• Body scan • Mindfulness of routine activity
2	• What is Stress and recognizing its presence and its effects. • Noticing stress in the body and the chatter of mind • Emotion, body sensations, behavior (thoughts are not facts)	• Mindful Movement • Home practice review • Thoughts/feelings exercise • Pleasant experiences diary Sitting Meditation introducing posture • Explanation of homework • Closing	• Body scan or mindful movement • Sitting meditation with focus on breath (10-15 mins) • Pleasant experiences diary • Routine activity • 'Noticing'
3	• Maintaining balance in life is helped by regular mindfulness practice, preparing for the future, the end of the beginning, not the beginning of the end • Good intentions can be strengthened by linking the practice with reasons for taking care of oneself.	• Mindful Movement • Homework review • Reflections on the course • Preparing for the future • Concluding meditation	

Measures

Five Facet Mindfulness Questionnaire. The Five Facet Mindfulness Questionnaire (Baer et al., 2006) is a 20-item, brief scale that assesses five different dimensions of Mindfulness, viewing it as higher-order factor. The five dimensions include: (I) Observe, (II) Describe, (III) Act with Awareness, (IV) Non-Reactivity to own thoughts, and (V) Non-Judgment of own experience. Participants indicate the frequency of 20 behaviors on a 7-point Likert scale (0=*almost never*, 6=*almost always*). Items include "I'm good at finding words to describe my feelings" and "I'm easily distracted". Half of the items are reverse scored. The scale presented good internal reliability (Pre α=.88; Post= α=.86), even though the authors of the latest validation suggest revising the items corresponding to Non-Reactivity (Tran et al., 2013).

Utrecht Work Engagement Scale. The Utrecht Work Engagement Short Scale (Schaufeli, Bakker, & Salanova, 2006) is a 9-item short-version questionnaire that assesses the three aspects of work engagement: (I) Vigor, (II) Dedication, and (III) Absorption. Participants indicate the frequency of specific feelings and behaviors on a 7-point Likert scale (0=*almost never*, 6=*almost always*), including "At my job, I feel strong and vigorous" and "I'm enthusiastic about my job". The scale presented high internal reliability (Pre α=.81; Post α=.95).

Pemberton Happiness Index. The Pemberton Happiness Index (Hervás & Vázquez, 2013) is an integrative measure of happiness that encompasses the different domains of remembered well-being (general, hedonic, eudemonic, and social) and experienced well-being (positive and negative emotional events that happened the day before). Participants use a 10-point Likert scale (10 = *strong agreement*, 1= *strong disagreement*) to indicate the degree of

agreement with 10 selected statements about remembered happiness, and they respond YES/NO to 10 experiences that occurred the day before, including “I feel very connected to the people around me” and “I did something I really enjoy doing”. The scale showed high internal reliability (Pre α=.85; Post α=.87) and consistency.

Self-Evaluated Performance. Six items were taken from the HERO (Healthy & Resilient Organization) questionnaire (Salanova, Llorens, Cifre, & Martinez, 2012) to assess in-role and extra-role self-rated performance on a 7-point Likert type scale (0=*almost never*, 6=*almost always*). The items include, “I achieve my work-related objectives” and “I go beyond my official responsibilities to help my teammates”. The scale showed good internal consistency (Pre α=.80; Post α=.85).

Data Analysis

A significance level of $p<0.05$ and two-tailed tests were employed throughout. Differences between group allocation conditions at baseline and endpoint were assessed using Analysis of Variance (ANOVA) with a 2 × 2 design (i.e., a group factor [intervention, control], and a time factor [baseline, endpoint]). In addition, univariate analysis of each outcome variable was performed, following the recommendations made by Winter (2013) to use Student’s T-test with small sample sizes to identify effects possibly overlooked in the analysis of variance. Effect sizes (Cohen’s d) were estimated based on difference scores of each dependent variable, and they showed the size of the between-groups effect (absolute value) using a mean averaged standard deviation. Cohen (1988) defined effect sizes as "small, d = .2," "medium, d = .5," and "large, d = .8", stating that "there is a certain risk inherent in offering conventional operational definitions for those terms for use in power analysis in as diverse a field of inquiry as behavioral science" (p. 25). Effect sizes can also be thought of as the average percentile standing of the average treated (or experimental) participant compared to

the average untreated (or control) participant. An effect size of 0.0 indicates that the mean of the treated group is at the 50th percentile of the untreated group. An effect size of 0.8 indicates that the mean of the treated group is at the 79th percentile of the untreated group. An effect size of 1.7 indicates that the mean of the treated group is at the 95.5 percentile of the untreated group.

Results

Results showed a significant interaction effect of group (intervention, control) and time (pre, post) for all the dependent variables [Mindfulness (F (1) = 43.10, p<0.001), Happiness (F (1) = 25.84, p<0.001), Performance (F (1) = 23.68, p<0.001), except Work Engagement (F (1) = 2.22, p<0.05). Figure 1 shows plotted means for each time factor (pre, post) across the groups (intervention and control). A clear and strong effect of the Mindfulness Program was observed for each outcome variable, suggesting that the Mindfulness Program improves levels of trait Mindfulness, Happiness, and Performance. Correlations, standard deviations, and Cronbach's alphas are shown in Table 2 for pre-intervention scores and in Table 3 for post-intervention scores on each variable.

Further analysis was carried out using paired samples t-tests for both groups (intervention, control) to test for differences between time factors. The results indicate significant differences in the intervention group's dependent variable mean scores [Mindfulness (t(18)=-7.88, p<0.001, d=0.66), Happiness (t(18)=-5.03, p<0.001, d=0.63), Work Engagement (t(18)=-4.06, p<0.001, d=0.50), Performance (t(18)=-4.76, p<0.001, d=0.72)]. This supports the ANOVA results that include Work Engagement among the outcome variables whose levels increased significantly in the intervention group.

Results from t-test comparisons of the time factor for the control group indicated no significant differences for the outcome variables Mindfulness ($t(14)=0.496$, $p=0.62$) and Work Engagement ($t(14)=-1.02$, $p=0.32$), and significant interactions for Happiness ($t(14)=2.24$, $p<0.05$, $d=0.07$) and Performance ($t(14)=2.41$, $p<0.05$, $d=0.46$)].

Finally, interaction effects were further examined by comparing time factors (pre, post) across each group (intervention, control). The results of t-test comparisons between groups (intervention, control) showed no significant interactions in all the outcome variables at baseline time [Mindfulness ($t(32)=-0.44$, $p=0.66$), Happiness ($t(32)=-0.65$, $p=0.52$), Work Engagement ($t(32)=-1.40$, $p=1.70$), Performance ($t(32)=-1.70$, $p=0.9$]. Comparison of the same variables at the end time shows significant interactions in all outcome variables [Mindfulness ($t(32)=-3.39$, $p<0.05$, $d=1.17$), Happiness ($t(32)=-2.49$, $p<0.05$, $d=0.89$), Work Engagement ($t(32)=-2.33$, $p<0.05$, $d=0.87$), Performance ($t(32)=-4.77$, $p<0.001$, $d=1.64$)]. Mean and standard deviation scores for each variable across both groups at different times (pre, post) are shown on Table 5.

Table 2: Pre-Intervention Means, Standard Deviation, Internal Consistency Reliability Coefficients and Correlations (N=34)

Variables	Mean	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
(1)Total Mindfulness (FFMQ)	3.48	0.68	0.88	0.71**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(2)Observe (FFMQ)	3.10	0.87	0.69	0.62**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(3)Describe (FFMQ)	3.47	0.81	0.63	0.72**	0.36**	-	-	-	-	-	-	-	-	-	-	-	-	-
(4)Awareness (FFMQ)	3.43	0.81	0.83	0.82**	0.26	0.40*	-	-	-	-	-	-	-	-	-	-	-	-
(5)Non Judgement (FFMQ)	3.63	1.10	0.84	0.67**	0.49**	0.25	0.62**	-	-	-	-	-	-	-	-	-	-	-
(6)Non Reactivity (FFMQ)	3.24	0.76	0.62	0.50**	0.42*	0.32	0.28	0.41*	-	-	-	-	-	-	-	-	-	-
(7)Total Happiness (PHI)	7.57	1.24	0.85	0.49**	0.36**	0.21	0.25	0.42*	0.54**	-	-	-	-	-	-	-	-	-
(8)Remembered Happiness (PHI)	7.48	1.27	0.87	0.38**	0.37**	0.22	0.24	0.41*	0.52**	0.99**	-	-	-	-	-	-	-	-
(9)Experienced Happiness (PHI)	7.25	1.40	0.92	0.23	0.12	0.08	0.30	0.36*	0.48**	0.61**	0.53**	-	-	-	-	-	-	-
(10)Total Work Engagement (UWES)	4.24	1.06	0.81	0.19	0.10	0.12	0.01	0.08	0.50**	0.64**	0.63**	0.55**	-	-	-	-	-	-
(11)Dedication (UWES)	3.90	1.29	0.86	0.21	0.06	0.13	-0.02	0.09	0.47**	0.61**	0.59**	0.58**	0.93**	-	-	-	-	-
(12)Vigor (UWES)	4.03	1.14	0.81	0.21	0.06	0.12	-0.06	0.18	0.47*	0.75**	0.75**	0.45**	0.87**	0.84**	-	-	-	-
(13)Absorption (UWES)	4.10	1.15	0.80	0.05	0.08	0.25	-0.03	0.04	0.50**	0.61**	0.61**	0.33	0.87**	0.78**	0.86**	-	-	-
(14)Performance	4.91	0.75	0.80	-0.68	-0.08	0.24	-0.12	0.02	0.12	0.29	0.29	0.18	0.26	0.31	0.44*	0.37	-	-
(15)In role Performance	4.85	0.90	0.76	1.61	-0.53	0.83	-0.23	-0.07	0.05	0.16	0.17	0.05	0.12	0.21	0.20	0.18	0.84**	-
(16)Extra Role Performance	4.97	0.82	0.87	0.71**	-0.93	0.34	0.04	0.12	0.16	0.32	0.32	0.25	0.33	0.31	0.55**	0.44**	0.81**	0.38*

FFMQ, Five Facet Mindfulness Questionnaire (0=Minimum;6=Maximum), PHI, Pemberton Happiness Index (0=Minimum;10=Maximum), UWES,Utrecht Work Engagement Scale (0=Minimum;6=Maximum), Performance (0=Minimum;6=Maximum)

*, $P<0.05$;**,$P<0.01$

Table 3: Post Intervention Means, Standard Deviation, Internal Consistency Reliability Coefficients and Correlations (N=34)

Variables	Mean	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
(1)Total Mindfulness (FFMQ)	3.48	0.68	0.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(2)Observe (FFMQ)	3.10	0.87	0.68	0.63**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(3)Describe (FFMQ)	3.47	0.81	0.67	0.56**	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-
(4)Awareness (FFMQ)	3.43	0.81	0.84	0.51**	0.09	0.28	-	-	-	-	-	-	-	-	-	-	-	-
(5)Non Judgement (FFMQ)	3.63	1.10	0.82	0.78**	0.52**	0.41*	0.48**	-	-	-	-	-	-	-	-	-	-	-
(6)Non Reactivity (FFMQ)	3.24	0.76	0.82	0.56**	0.37*	0.22	0.15	0.18	-	-	-	-	-	-	-	-	-	-
(7)Total Happiness (PHI)	7.57	1.24	0.87	0.48**	0.34	0.12	0.15	0.35	0.48**	-	-	-	-	-	-	-	-	-
(8)Remembered Happiness (PHI)	7.48	1.27	0.89	0.53**	0.32	0.15	0.21	0.38*	0.45*	0.96**	-	-	-	-	-	-	-	-
(9)Experienced Happiness (PHI)	7.25	1.40	0.90	0.34	0.16	0.18	0.27	0.34	0.24	0.60**	0.62**	-	-	-	-	-	-	-
(10)Total Work Engagement (UWES)	4.24	1.06	0.95	0.27	0.03	0.08	-0.04	0.01	0.53**	0.65**	0.42*	0.55**	-	-	-	-	-	-
(11)Dedication (UWES)	3.90	1.29	0.85	0.24	0.03	0.09	-0.05	-0.27	0.45*	0.70**	0.71**	0.52**	0.93**	-	-	-	-	-
(12)Vigor (UWES)	4.03	1.14	0.90	0.30	0.09	0.08	-0.01	0.04	0.44*	0.73**	0.76**	0.45**	0.92**	0.96**	-	-	-	-
(13)Absorption (UWES)	4.10	1.15	0.82	0.27	0.03	0.18	0.04	-0.09	0.47*	0.56**	0.60**	0.39*	0.90**	0.86**	0.86**	-	-	-
(14)Performance	4.91	0.75	0.85	0.08	0.09	0.20	-0.30	-0.18	0.13	0.25	0.18	-0.13	0.30	0.35	0.36	0.26	-	-
(15)In role Performance	4.85	0.90	0.81	-0.62	0.12	0.03	-0.45*	-0.28	0.05	0.11	0.05	-0.19	0.17	0.20	0.18	0.12	0.88**	-
(16)Extra Role Performance	4.97	0.82	0.87	0.21	0.32	0.33	-0.49	-0.30	0.18	0.33	0.28	0.07	0.35	0.39*	0.46*	0.34	0.85**	0.51**

FFMQ, Five Facet Mindfulness Questionnaire (0=Minimum;6=Maximum), PHI, Pemberton Happiness Index (0=Minimum;10=Maximum), UWES,Utrecht Work Engagement Scale (0=Minimum;6=Maximum), Performance (0=Minimum;6=Maximum)

*, $P<0.05$;**,$P<0.01$

Table 4: Baseline demographic characteristics for each condition

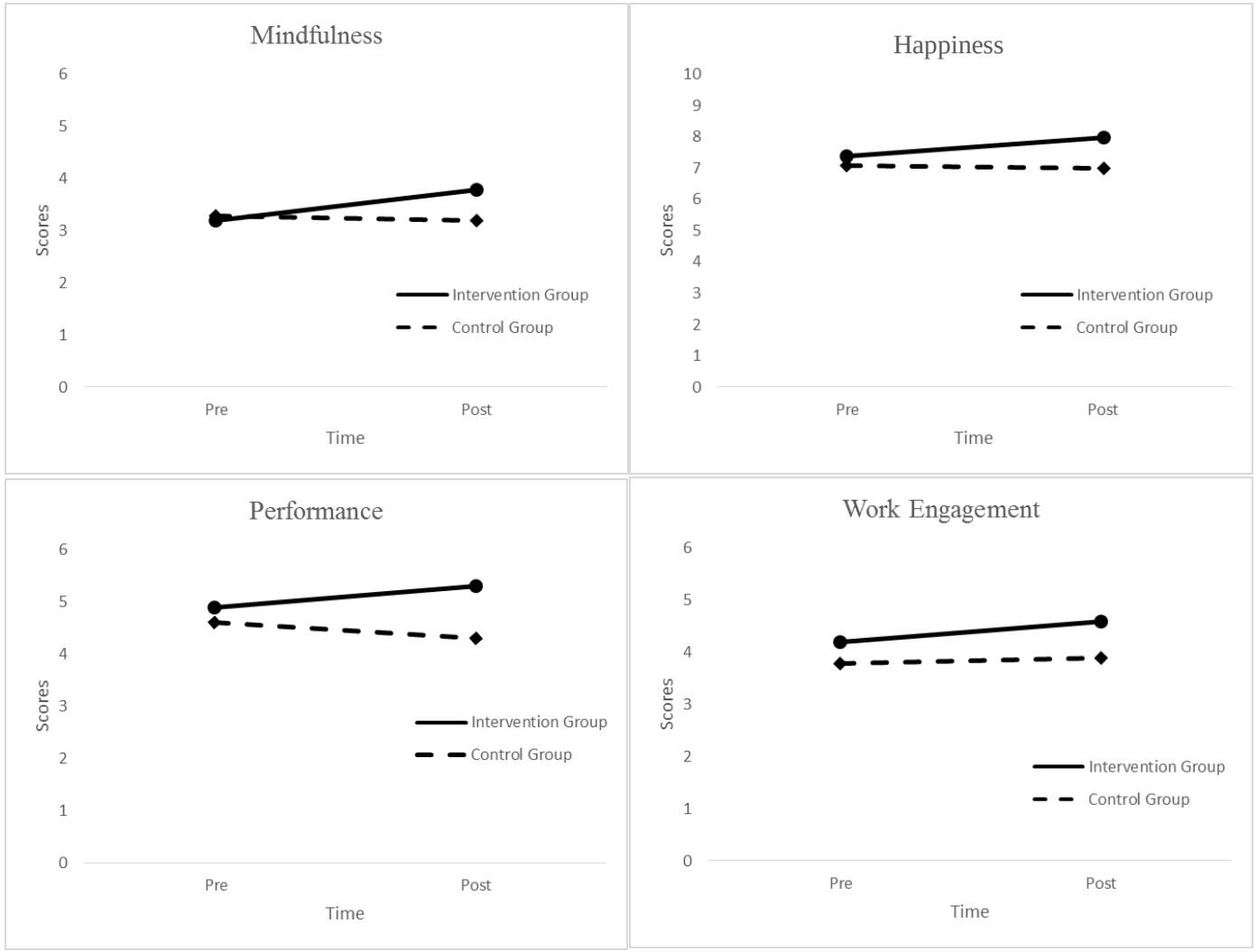
	Intervention (N=19)	Control (N=15)
Age, mean(SD)	38 (6.11)	36(6.67)
Female (%)	95%	60%
Tenure, mean (SD)	3.6(2.1)	3.9(1.8)

Table 5: Pre – Post Intervention and Control Groups Scores– Mean (SD)

	Intervention (N=19)		Control (N=15)	
	Pre	Post	Pre	Post
Mindfulness (FFMQ)	3.2 (0.5)	3.8 (0.4)	3.3 (0.5)	3.2 (0.6)
Observe (FFMQ)	3.0 (0.8)	3.6 (0.6)	3.0 (0.9)	2.8 (0.7)
Describe (FFMQ)	3.4 (0.7)	3.9 (0.6)	3.6 (0.7)	3.4 (0.7)
Awareness (FFMQ)	3.5 (0.5)	3.7 (0.5)	3.6 (0.7)	3.3 (0.7)
Non Judgement (FFMQ)	3.2 (1.1)	3.8 (0.9)	3.6 (1.3)	3.4 (1.1)
Non Reactivity (FFMQ)	3.0 (0.8)	3.5 (0.7)	3.0 (0.8)	2.7 (0.7)
Happiness (PHI)	7.4 (1.0)	8.0 (0.9)	7.1 (1.3)	7.0 (1.3)
Remembered Happiness (PHI)	7.4 (1.0)	7.8 (0.9)	7.2 (1.3)	7.2 (1.3)
Experienced Happiness (PHI)	6.6 (1.6)	7.3 (1.4)	6.1 (1.4)	6.3 (1.2)
Engagement (UWES)	4.2 (0.8)	4.6 (0.8)	3.8 (0.9)	3.9 (0.8)
Dedication (UWES)	4.3 (1.0)	4.6 (0.7)	3.5 (1.2)	3.6 (1.1)
Vigor (UWES)	4.0 (0.9)	4.6 (0.8)	3.7 (1.1)	3.7 (1.1)
Absorption (UWES)	4.3 (0.8)	4.7 (0.8)	3.8 (1.2)	3.8 (1.2)
Performance	4.9 (0.6)	5.3 (0.5)	4.6 (0.6)	4.3 (0.7)
In role Performance	4.5 (0.6)	5.2 (0.5)	4.4 (0.8)	4.3 (0.7)
Extra Role Performance	4.8 (0.5)	5.3 (0.4)	4.6 (0.7)	4.5 (0.7)

FFMQ, Five Facet Mindfulness Questionnaire (0=Minimum;6=Maximum),
PHI, Pemberton Happiness Index (0=Minimum;10=Maximum),
UWES,Utrecht Work Engagement Scale (0=Minimum;6=Maximum),
Performance (0=Minimum;6=Maximum).

Figure 1. Line plots showing the impact of time factor (pre, post) on dependent variables across groups.



Discussion

A controlled trial was conducted to assess the effectiveness of a short MBI as a Positive Organizational Psychology optimization intervention for improving Mindfulness, Work Engagement, Happiness, and Job Performance. A small sample of healthcare workers was allocated to the MBI group or a waiting list control group that received the intervention protocol once the study had ended. Outcomes are consistent with the proposed hypothesis. After participating in the three-week intervention program, participants showed significant improvements with moderate effect sizes, compared to controls, on levels of Mindfulness, Work Engagement, Happiness, and Job Performance. The findings suggest that the abbreviated Mindfulness training program is a successful strategy for improving employee happiness, work engagement, and performance (for a graphic representation of differences between the intervention and control groups, see Figure 1).

The results are generally consistent with the findings from the following studies on Mindfulness in occupational contexts: (i) a randomized controlled trial by Shonin et al. (2014) showing that an eight-week second-wave MBI called MAT (Mindful Awareness Training) diminished the levels of work-related stress and psychological distress, and increased job satisfaction and employer-rated job performance; (ii) a cross-sectional study by Ho (2011) showing that an employee meditation experience was positively associated with self-directed learning, organizational innovativeness, and organizational performance in Taiwanese technological company workers; (iii) a cross-sectional study of employed (i.e., >20 h per week) parents by Allen and Kiburz (2012) showing that trait mindfulness was positively associated with work-life balance, sleep quality, and vitality; (iv) a longitudinal growth modeling study about the positive effect of MBIs on promoting Work Engagement through the mediation of Authentic

Functioning (Leroy et al., 2013); and (v) a controlled trial of an 8-week mindfulness training program in a UK-based organization that reported improved scores on measures of well-being, satisfaction with life, hope, and diminished scores of anxiety (Mellor et al., 2016).

Unexpectedly, participants allocated to the control group showed a statistically significant decrease in their well-being and performance scores. To find a possible explanation for this occurrence, we took a closer look at the participants' work conditions and possible events that could help us to explain this negative outcome. First, the participants were allocated to the control group using a "first-come, first-served" logic, and so it is plausible that some frustration could be experienced by those who wished to attend the first round of sessions of the program and could not do so because they did not respond fast enough. The negative emotions associated with this event could somewhat explain the decrease in self-ratings of well-being and performance, inducing perceptions of low self-efficacy and lack of psychological resources to cope with their existing job demands. Second, some participants in the control group could have been impeded by their work load and existing resources from successfully enrolling in and attending the program at that specific moment. In this regard, knowing that there is a stress management program available at their workplace and not being able to attend due to time/work constraints could produce heightened awareness of negative and stressful experiences. This poses a significant challenge to developing successful interventions in the future. Securing support and commitment from management, translated specifically into time and space to conduct the intervention program within the required time margins, is a critical element for success, as well as making sure that participants' workload does not keep them from attending this kind of initiative. The negative changes experienced by the control group members are consistent with the idea that awareness heightens affective experience

and reactivity, exacerbating negative symptoms when not coupled with acceptance and coping/reappraisal skills.

Even considering the presence of these negative outcomes, we believe the findings of this study support the happy and productive worker theory (Wright et al., 2002), which proposes the relevance of positive affect and wellbeing as key elements in promoting healthy and high-achieving work environments and workers. Moreover, it serves as a valid and innovative example of a Positive Organizational Intervention designed to develop specific positive outcomes associated with high performance and psychosocial well-being.

Regarding the underlying psychological mechanisms that explain the effectiveness of the mindfulness intervention program, the structure and content of the program indicate that attention-related skills, such as awareness and observation, and perceptual focus shifting skills, such as acceptance, non-judgment, and non-reactivity, are the two main components. Attention monitoring skills cultivated through mindfulness meditation exercises enhance awareness of the present moment experience. As such, attention monitoring is a mechanism for the effects of mindfulness on improving cognitive functioning outcomes in affectively neutral contexts (Lindsay & Creswell, 2016), and it heightens affective experience and reactivity, both exacerbating negative symptoms and enhancing positive experiences. Therefore, attention monitoring skills alone are not sufficient to improve performance on cognitive tasks that balance attentional control with emotion regulation. Acceptance modifies the way one relates to the present moment experience, regulating reactivity to affective experience. Thus, attention monitoring and acceptance skills together boost performance on cognitive tasks that involve emotion regulation, reduce negative reactivity (e.g., anxiety, depression, stress), reduce grasping for positive experiences (e.g., craving, substance use), and improve stress-related health outcomes (Lindsay & Creswell, 2016). Moreover, positive

reappraisal could be another plausible psychological mechanism explaining the effects of the intervention program. Garland et al. (2015a) propose the mindfulness-to-meaning theory, which asserts that by modifying how one attends to the cognitive, affective, and interoceptive sequelae of emotion provocation, mindfulness introduces flexibility into the creation of autobiographical meaning, stimulating the natural human capacity to positively reappraise adverse events and savor the positive aspects of experience. By fostering positive reappraisals and emotions, mindfulness may generate deep eudemonic meanings that promote resilience and engagement with a valued and purposeful life. Another important mechanism through which mindfulness is believed to modulate dysphoric mood states and enhance well-being (whether work-related or otherwise) is via the cultivation of compassion and self-compassion. Research has shown that mindfulness can lead to a greater awareness of the individual's own suffering and psychological distress, and this helps to achieve a greater awareness of the suffering of others (Shonin et al., 2013a). In turn, greater levels of compassion and self-compassion are thought to lead to improvements in levels of tolerance, cooperation (e.g., with senior management), and interpersonal skills in general (Shonin et al., 2013b). Based on this idea, there is empirical evidence supporting the relationship between facets of mindfulness and self-compassion as relevant elements to explain well-being (Baer, Lykins, & Peters, 2012; Campos et al., 2015). Las but not least, Davidson and Schuyler (2015) presented relevant neuroscientific evidence pointing to four constituents of well-being attained through Mindfulness training, this are: 1. Sustained Positive Emotion; 2. Recovery from negative emotion; 3. Empathy, altruism and pro-social behavior; and 4. Mind wandering, mindfulness and emotion-captured attention. All of the neural circuits identified as underlying to these four constituents of well-being exhibit plasticity, and thus can be transformed through experience and training regimes as short as two weeks.

Although the efficacy of shorter versions of traditional MBIs remains to be demonstrated in the long run, the findings of this study suggest that it is relevant to utilize these abbreviated treatments. They are a cost and time effective way to introduce Mindfulness training and practice as a Healthy Organizational Practice (Salanova et al., 2013) aimed to promote Work Engagement, Happiness, and Job Performance. The traditional eight-week programs are a "gold standard" for MBIs, but establishing the necessary commitment from management to develop such a program in any kind of organization is difficult to accomplish without any prior experience in Mindfulness. In this regard, shorter versions of consistently proven intervention protocols could act as a successful first step in developing Mindfulness practice as a long-term strategy to effectively promote and sustain an Engaged, Happy, and Productive workforce. In fact, Jon Kabat-Zinn (1990), who developed MBSR, describes mindfulness as a skill that can only be developed through continuous practice. Comparing it with a muscle, he explains that mindfulness can only grow, become stronger, and become more flexible when we continuously work on it and challenge it (Hülsheger, 2015).

Limitations

The most relevant limitation of the study is the sample size, combined with the lack of a proper active control intervention, instead of the waiting list format. It was a significant challenge to recruit participants in a highly demanding work environment in terms of quantitative overload and limited time. Therefore, it is necessary to clarify and establish management's commitment to supporting the intervention program as a key element when repeating the study with a larger sample size. Even though positive results were observed, the size of the sample is too small to make assumptions about the general efficacy of short MBIs as Positive Organizational Psychology

optimization interventions. Furthermore, the lack of a specific and comparable alternative intervention for the control group undermines the value of the results, considering that any kind of intervention is usually better than nothing at all. Additionally, the exclusive use of self-report measures is a weakness that should be addressed in future research projects by incorporating second and third person ratings, as well as behavioral indicators such as key performance indicators.

Future Research

The most important line of research that emerges from the results of this study involves conducting high-standard controlled trials with larger samples and active control group intervention programs. Following this approach would be a necessary step in validating the efficacy of shorter versions of MBIs and making a stronger case for Mindfulness as a strategy to promote happy and productive workers. As a complementary approach, intervention evaluation through diary studies could yield relevant information about the underlying psychological mechanisms affected by Mindfulness practice that have a direct impact on Happiness, Work Engagement, and Job Performance, such as positive emotions, coping mechanism, character strengths, and mindsets. Another possible line of inquiry would be to consider the influence of organizational practices and characteristics and their positive/negative interactions with Mindfulness, Happiness, Work Engagement, and Job Performance at both an individual and collective level of analysis.

Chapter 4

Feeling happy every working day: A diary study of a brief Mindfulness Intervention

Abstract

A brief mindfulness-based positive psychological intervention (PPI) program was developed at a public hospital in Spain as a strategy to promote employee emotional wellbeing and engagement. Forty participants were distributed between control and intervention groups and responded to a daily questionnaire assessing their levels of positive emotions and absorption during 12 non-consecutive days. Results suggest that the intervention program was effective at increasing the growth trajectory of daily positive emotions for the participants in the intervention group. Also, results showed no significant growth effects for daily levels of absorption. The underlying psychological mechanisms possibly explaining these differences are increases in attentional capacity as well as executive control and cognitive flexibility. This study supports the case for brief mindfulness interventions as effective strategies to promote emotional wellbeing at work.

Keywords: Mindfulness at work, Positive emotions, Absorption, Diary study.

Mindfulness-based interventions (MBIs) at work are becoming a mainstream phenomenon with organizations such as Google, Aetna, and many others using mindfulness training to improve and optimize their employees' mental health and performance with mixed results (Kersemaekers, Rupprecht, Wittmann, Tamdjidi, et al., 2018; Lomas et al., 2017; Wolever et al., 2012). Mindfulness is defined as a form of awareness that stems from attending to the present moment in a non-judgmental and accepting manner (Bishop et al., 2004). Despite this growing interest, empirical evidence supporting the benefits of mindfulness interventions at work is still limited, particularly when it comes to aspects of mental health that go beyond the mitigation of stress and the associated adverse outcomes (Bartlett et al., 2019; Good et al., 2016). For example, in a recent inclusive review of studies evaluating the effects of MBI at work Lomas et al. (2017) showed that measures of strain and psychological distress appear in twice as many studies as measures of wellbeing. As well, most scientific models of mindfulness focus on the suppression of maladaptive habits and disengagement from negative states of mind rather than on the cultivation of adaptive behavior and positive states of mind such as psychological and emotional wellbeing (Garland, Farb, Goldin, et al., 2015b). This negativity bias is curious, considering that MBIs aim to enhance positive outcomes in several different domains of life (Crane et al., 2017). Exploring the positive effects of MBIs at work is important both from the theoretical and applied perspectives. From the theoretical standpoint, it is necessary to move towards a unified explicative model of mindfulness that incorporates the cultivation of positive mental states rather than just focusing on the avoidance or reduction of negative states and experiences. From the applied perspective, wellbeing reduces the risk of developing mental disorders (Keyes et al., 2010), and acts as a mediator in relevant positive outcomes at work such as resilience (Meneghel et al., 2016), self-efficacy (Salanova et al., 2011), and performance (Peñalver et al., 2017; Salanova et al., 2012; Zelenski et al., 2008). As

well, it plays an integral role in the development of personal resources and helps people, groups, and organizations thrive (Barbara L Fredrickson, 2000). Thus, developing sound and context-sensitive interventions aimed at promoting wellbeing at work is an extremely relevant endeavor in society where a significant amount of the working population experiences high levels of stress and low levels of wellbeing and engagement (Eurofound, 2017). In response to this gap, there is a calling for new studies were MBIs focus on wellbeing variables both as part of the intervention rationale and the evaluation of intervention effects (Lindsay & Creswell, 2015).

Moreover, perceptions of wellbeing fluctuate significantly from day to day, and there are several studies showcasing the daily variation of a person's affective states (Xanthopoulou et al., 2012)., and experiences such as work engagement (Tims et al., 2011). Diary studies offer means to analyze such fluctuating processes (Ohly et al., 2010), and propose an account of "life as it is lived" instead of a snapshot of a given moment frozen in time (Bolger et al., 2003). This allows for a richer representation of a complex and everchanging process, such as wellbeing at work. Although the effects of MBIs on wellbeing as a PPI have been studied in at least a couple of studies (Coo & Salanova, 2018; Howells et al., 2014), they lacked depth and detail in their description of how the changes related to the intervention process actually occurred. In an effort to address this gap, we utilize a daily diary design for the present study. This will allow us to offer an account of the intervention's effects that is closer to the participant's day to day experiences. Additionally, we aim to support the case for the use of brief PPI protocols at work, since the limited resources available for training and development initiatives in the majority of organizations is a significant constraint that can be tackled by less resource-intensive intervention protocols (Gilbert et al., 2018)

Thus, the aim of the present study is to measure the effects of a brief MBI at work on the daily levels of positive emotions and absorption as two constructs that represent distinct and complementary aspects of psychological wellbeing: hedonic and eudaimonic wellbeing.

Mindfulness and Wellbeing

Wellbeing is a multidimensional construct that can be described in many different ways, from subjective wellbeing focusing on positive emotions and cognitive assessments of our satisfaction with life to experiences of mastery and personal growth (Diener et al., 2016; Ryff & Singer, 2008). Moreover, wellbeing is a key element in the holistic definition of health that goes beyond the mere absence of suffering and disease to include happiness, thriving, and personal growth (WHO, 2005). An integrative approach to wellbeing incorporates two different but complementary perspectives: The hedonic approach, which focuses on positive emotions, happiness and the avoidance of suffering, and the eudaimonic approach, which focuses on self-realization, engagement, and personal growth (Ryan & Deci, 2001a).

The essence of well-being is a mindful attitude, which entails noticing new experiences, active orientation to the present moment, openness to new information, continuous creation of new categories and distinctions, sensitivity to different contexts, and awareness of multiple perspectives (Langer et al., 1978) and MBIs have the potential to be an effective strategy to promote wellbeing from both perspectives, hedonic, and eudaimonic. Concerning the hedonic perspective, changes in the attentional capacity associated with the practice of mindfulness are explicitly related to perceiving positive elements of our present experience with more frequency and depth (Holzel et al., 2011; Tang et al., 2015). In other words, mindfulness practice can make us more receptive to positive affective stimulus available in or day to day experiences. Furthermore, mindfulness is one of the central dimensions of experience savoring (Cebolla et al., 2017). Mindfulness enables

individuals to become more easily aware of the pleasant aspects of the experiences chosen to savor as well as to explore with more depth the positive emotions triggered by those episodes (Ivtzan et al., 2016). In line with these ideas, Killingsworth & Gilbert (2010) showed that individuals who focus their attention in present moment activities tend to experience higher levels of hedonic wellbeing (i.e., positive emotions). Closer attention to the variations in our emotional experiences also allows us to notice and fully experience wellbeing when it emerges in a manner that common sense expectations would not predict. Day to day workplace activities present an untapped source of positive emotions if looked through the lens of mindfulness. As well, a mindful attitude involves identifying the positive aspects of a negative situation, defining negatives in terms of positives, looking for variation within stability, and creating novel ways of distinguishing preexisting categories. Mindfulness therefore involves accepting and actively applying a new and different orientation to one's prior way of understanding the world. This process of validating outdated assumptions against novel circumstances allows for exercising choice in the present, and the engagement that accompanies making choices also allows for positive emotions and wellbeing to be experienced (Ngnoumen & Langer, 2016). A reflection of this process is the mindfulness to meaning theory, which poses that through mindful reappraisal of negative events it is possible to foster meaning and positive affect (Garland, Farb, Goldin, et al., 2015a). Thus, skillfully deployed MBIs can be a triggering factor in changing employees' daily experiences of positive emotions.

Mindfulness and Absorption

Challenging workplace activities related to eudaimonic wellbeing that promote personal growth are, by definition, goal-oriented and require a considerable amount of concentration and absorption (Rodríguez-Sánchez et al., 2011). Mindfulness can enhance the capacity to be attentive and immersed in work-related tasks through sharpening attentional capabilities and facilitating the

connection with intrinsic and values related motivation and behavior (Leroy et al., 2013). Mindfulness practice may assist this effect through at least three different pathways. First, by decreasing individuals' tendency to function in "autopilot" where moment to moment decisions influenced by immediate external factors are prioritized over values-related choices and actions. Second, by encouraging practitioners to intentionally engage their attention, focusing on meaningful and challenging activities with an attitude of curiosity and openness to experience. (Shapiro et al., 2006). Third, by helping individuals recognize and clarify personal values (Franquesa et al., 2017). In turn, clarification of personal values can lead to clearer and more meaningful goals that, committed actions, and engaging with challenging activities in a way that fosters wellbeing (Harris et al., 2003; Hayes et al., 2006). When individuals become absorbed in their day to day work activities infused by positive emotion and informed by personal values instead of pushed by compulsion, it becomes clear that absorption is an aspect of wellbeing and engagement at work (Taris et al., 2010). Becoming absorbed in the present moment, while being able to let the past and future thoughts come and go without judgment, is central to mindful awareness, and the level of absorption resulting from some mindfulness meditation practices is deep. This rationale is represented by the monitor and acceptance theory, which highlights those two processes as mindfulness's core components (Lindsay & Creswell, 2015). Approaching challenges with an attitude of acceptance, or moving towards challenging tasks, and letting go of the fear of judgments, or evaluations of performance, helps the mindset of absorption and engagement. In other words, mindfulness can help workers to be happily absorbed and focused on day to day challenging work activities. Both states involve a letting go of worrying about the self, as attention is focused fully on a present-moment experience. Brown & Cordon (2009) refer to the distinction between what has been termed the 'narrative self' (a coherent group of cognitions

around an individual's place in the world), and an 'experiential self' (an individual's immediate experience of reality, also described as 'bare attention'). Mindfulness, in its simplest form, is described as bare attention, or attention fully in the present, and encourages movement away from the narrative self. Experiencing times of 'bare attention', when attention is fully immersed in the task at hand, can help to build the capacity for absorption.

Aligned with the exposed ideas, we propose the following hypotheses:

*H*1: Participants in the MBI group will experience a pronounced increase in daily levels of positive affect compared to the waiting-list control group.

*H*2: Participants in the MBI group will experience a pronounced increase in daily levels of absorption compared to the waiting-list control group.

Method

Research Approach

A quasi-experimental design diary study with an intervention and a waiting list control group was utilized for this study. Particularly with the intention to capture daily variability of the selected outcomes and approach the phenomena of wellbeing at work from an ecological perspective.

Participants and procedure

Forty-nine workers from a semi-public hospital in Spain were distributed between an intervention (n=25) and a control group (n=24). Group allocation was not randomized due to the

shift-based nature of work in the hospital, and some participants occupying key roles in different units. Six participants were excluded from the final sample because of incomplete surveys and three due to dropout, which resulted in 40 usable diary surveys. The final sample included 25 females (60%) and 15 males (40%). Participants' mean age was 37.3 years (SD=6.39), their tenure was on average, 3.80 years (SD=1.92), and 78% of them had a full-time contract. This study was a replication initiative based on the MBI protocol evaluated in a previous study (Coo & Salanova, 2018). Part of our present sample corresponds to participants allocated in the control group in the study described in Coo & Salanova (2018). Considering this, we made sure that on this iteration, they took part of the MBI group.

All of the participants worked at as part of the general staff (nurses, medics, administrative, and auxiliary personnel). Participants were asked to review and sign an informed consent letter on data protection and confidentiality. At the end of the first training session, the participants were handed a paper booklet containing the daily measures questionnaire and asked to complete it for four consecutive workdays after completing each training session held on Mondays, yielding a total of twelve days during three successive weeks.

Intervention Protocol

The intervention program was called “Stress Management and Wellbeing promotion for Health Professionals” and was a short adaptation of the standardized Mindfulness-Based Cognitive Therapy program (MBCT; Segal et al., 2001). As well, the program was recognized by Spain’s national commission for job training activities.

The participants attended three 2.5 hours sessions held on Mondays during three consecutive weeks. They were given a CD containing guided meditations to facilitate daily self-

practice. Weekly training sessions were structured considering three different components: (I) A presentation with academic input (approximately 60 minutes), (II) a facilitated group discussion and reflection (approximately 60 minutes), and guided mindfulness exercise (approximately 30 minutes). A short break (5-10 minutes) was scheduled before the guided meditation practice. The participants were encouraged to develop both formal and informal mindfulness practice logging their daily practice efforts throughout the program. A certified mindfulness instructor facilitated the program. To complete the workshop the participants were required to attend all three sessions.

Measures

Daily Positive Emotions were assessed by the Spanish validation (Sandín et al. 1999) of PANAS (PANAS-positive) self-reported subscale (Watson et al. 1988). It consists of a list of 10 adjectives, rated on a 5-point scale (from 1 'Not at all' to 5 'Extremely') that measures 'positive' affectivity. Present-moment instructions were used, asking the participants to answer the questionnaire focused on their present moment experience focusing on their emotional state at the end of each workday. Cronbach's alphas ranged from .72 to .93 (M= .88 across the twelve days).

Daily Absorption was measured using the absorption sub-scale of the Spanish adaptation (Llorens et al., 2013; Salanova et al., 2006) of the WOLF (Work-Related Flow; Bakker, 2001). Participants were asked to answer how often during their workday (six items; e.g., 'When I'm working, I forget everything around me') they had these experiences at work on a seven-point Likert type scale (0 'never' to 6 'almost always'). Cronbach's alphas ranged from .88 to .93 (M= .91 across the twelve days).

Time. Thee 12 non-consecutive workdays in between training sessions were scaled such that 0 represented the value for day 1 and 1 the value for day 12, with the remaining ten days

spaced equally across the 0 to 1 interval. This scaling of time implies that a linear slope for time estimates the total change in levels of positive emotions and absorption over the complete intervention program span.

Analysis

Our intensive repeated measures data has a hierarchical structure of days nested within persons, and considering our focal explanatory variable at level 1 (i.e., Time), we used a linear growth modeling approach (Raudenbush & Bryk, 2001) This yields a two-level model with days as our level one variable (n =480 days registered) and individual participants as our level two variable (n=40 participants). According to González-Romá & Hernández (2017), a minimum of 30 units at the highest level of analysis is necessary to test for cross-level effects and interactions. Since our sample is composed of 40 participants at level 2, we have a minimum sufficient sample size to produce robust estimations. As well, linear growth modeling allows controlling for autocorrelation in errors that may lead to standard errors that are too small and test statistics that are too large (Greene, 2002). All statistical analyses were conducted using IBM SPSS 26 statistical package, more specifically using mixed linear models with random and fixed parameters following Bolger & Laureceau (2013). Finally, as measure to address common-method bias we performed confirmatory factory analysis forcing single unrotated factor solution to support the distinctiveness of the measured constructs (Podsakoff et al., 2012).

Results

Descriptive Statistics

Inspection of person-to-person scatter plots indicated that the within-person changes in daily levels of positive affect and absorption over time were approximately linear. As well, the plots did not reveal any outliers. Means, standard deviations, and correlations for the demographics and study variables are shown in Table 1. Gender, tenure, and type of contract were controlled for in the model for daily positive emotions but yielded no significant effects and thus are excluded further on from the results section. (Gender, p=.545; Tenure, p=.749; Type of Contract, p=.557).

Table 1. Means, standard deviation, internal consistency reliability coefficients and correlations among study variables (N = 40 employees)

Variables	Mean	SD	1	2	3	4	5
1. Gender	1.19	0.39	-	-	-	-	-
2. Tenure	3.73	1.88	.09	-	-	-	-
3. Type of Contract	1.38	0.74	.29*	-.50**	-	-	-
4. Daily Absorption	3.84	1.02	-.05	.03	.39	-	-
5. Daily Positive Affect	3.66	0.95	-.16**	-.22**	.11*	.41**	-

Note: *, p<.05;**,p<.01

Multilevel Models of Positive Emotions and Absorption Change

We specified and estimated two linear growth models, one for positive affect and one for absorption. First, in order to establish necessary conditions for multi-level modeling, we estimated interclass correlation coefficients (ICC1; Bliese & Ployhart, 2002) in order to determine the daily amount of variance present at the within and between-person levels. For daily positive emotions, the ICC1 was .33, indicating 33% of the variance can be explained by

between-person differences. For daily levels of absorption, ICC1 was .65, indicating that 65% of the variance can be explained between-person differences.

The multilevel growth modelling sequence was based on recommendations by Bliese & Ployhart (2002) and was repeated for each daily dependent variable (i.e., positive emotions and absorption). First, the most parsimonious and best fitting null model for each outcome was established. Considering that the longitudinal data had high ICC1 values, indicating between-person variance, the first step was a random intercept model. Time was added to the equation to reveal a significant linear relation between time and positive emotions, (β = .03, t(393) = 4.72, p < .001, 95% CI [.02, .04]), and absorption, (β = -.02, t(395) = -2.52, p < .05, 95% CI [-.03, -.01]). The quadratic relation was nonsignificant for both positive affect, (β =.30 t(392) = .97, p = .36, 95% CI [−.33, .93]), and absorption, (β = -.16, t(394) = -0.45, p = .65, 95% CI [−.89, .55]), indicating better fit with a linear growth model. Based on net increases in log likelihood ratios denoting better fit of the data, we allowed for a random slopes model across participants and corrected for autocorrelation.

We allowed each participant to have their own initial levels and rates of change of each variable. We expected no baseline differences in average initial levels of positive emotions and absorption. The results support the absence of baseline differences for positive emotions (β=0.21, *t*(32)= 0.740, *p*=.465, 95% CI [-0.36, 0.78]) and absorption (β=0.39, *t*(32)= 1.252, *p*=.220, 95% CI [-0.24;1.03]).

Next, Hypotheses 1 and 2 stated that participants in the intervention group would exhibit a pronounced increase in their daily levels of both positive emotions and absorption when compared to the participants allocated in the waiting-list control group. For positive emotions the time*group interaction shows significant differences in the growth pattern in favor of the

intervention group (β=0.42, *t*(26)= 1.978, *p*=.048, 95% CI [-0.02, 0.88]). The graphical representation of the growth patterns presented in Figure 1 suggests that participants in the intervention group experienced increased levels of positive emotions throughout the intervention program. This difference became more evident on days were participants in the control group reported lower levels of positive emotions than average. As well, it is possible to observe that the days were participants in the intervention group reported the lowest levels of positive emotions; these were equivalent to the days of highest positive emotions reported by members in the control group. Therefore Hypothesis 1 is supported.

For absorption the time*group interaction shows no significant differences in the growth pattern between groups (β=0.39, *t*(26)= 1.252, *p*=.220, 95% CI [-0.24, 1.03]). Although the effect is not statistically significant, the graphic representation presented in Figure 2 shows descriptive differences in the growth patterns representing each group. The intervention group's curve presents a flatter curve were the days of lowest levels of absorption reported by the participants in the intervention group are equivalent to the days of highest levels of absorption reported by participants in the control group throughout the intervention time. Despite the descriptive differences, Hypothesis 2 is not supported due to the non-significant nature of the effect.

Furthermore, the test for autocorrelation of the errors was non-significant for both variables, indicating the absence of autocorrelation [Positive emotions (*p*=.616), Absorption (*p*=.885)].

Table 2. Parameter Estimates of Linear Growth Model of Daily Positive Affect and Daily Absorption as a Function of Intervention Group

	Daily Positive Affect					Daily Absorption				
Fixed Effects (intercepts, slopes)	γ	SE	*t*	*p*	CI_{95}	γ	SE	*t*	*p*	CI_{95}
Intercept	3.13	.47	6.666	<.001	2.17;4.10	3.33	.52	6.395	<.001	2.27;4.40
Time	0.15	.16	0.939	.356	-0.18;0.49	-0.34	.17	-1.960	.0.59	-0.69;0.13
Group	0.21	.28	0.740	.465	-0.36;0.78	0.39	.31	1.252	.220	-0.24;1.03
Group by time	0.42	.21	1.978	<.05	-0.02;0.88	0.17	.23	0.782	.440	-0.28;0.64
Random Effects (covariances)	γ	SE	*z*	*p*	CI_{95}	γ	SE	*z*	*p*	CI_{95}
Level 2 (between-person)										
Intercept	0.58	.16	3.526	<.001	0.33;1.01	0.72	.20	3.516	<.001	0.41;1.25
Time	0.16	.11	1.466	.143	0.04;0.61	0.15	.11	1.344	.179	0.03;0.66
Intercept and time	-.04	.10	-0.404	.686	-0.22;0.14	-0.08	.11	-0.705	.481	-0.30;0.14
Level 2 (within-person)										
Residual	.26	.02	12.73	<.001	.22;.31	.345	.03	13.01	<.001	0.29;0.40
Autocorrelation	.03	.06	0.501	.616	-.10;.15	-.001	.06	-0.146	.885	-0.12;0.11

N = 40 employees (Level 2), and N= 480 occasions (Level 1).

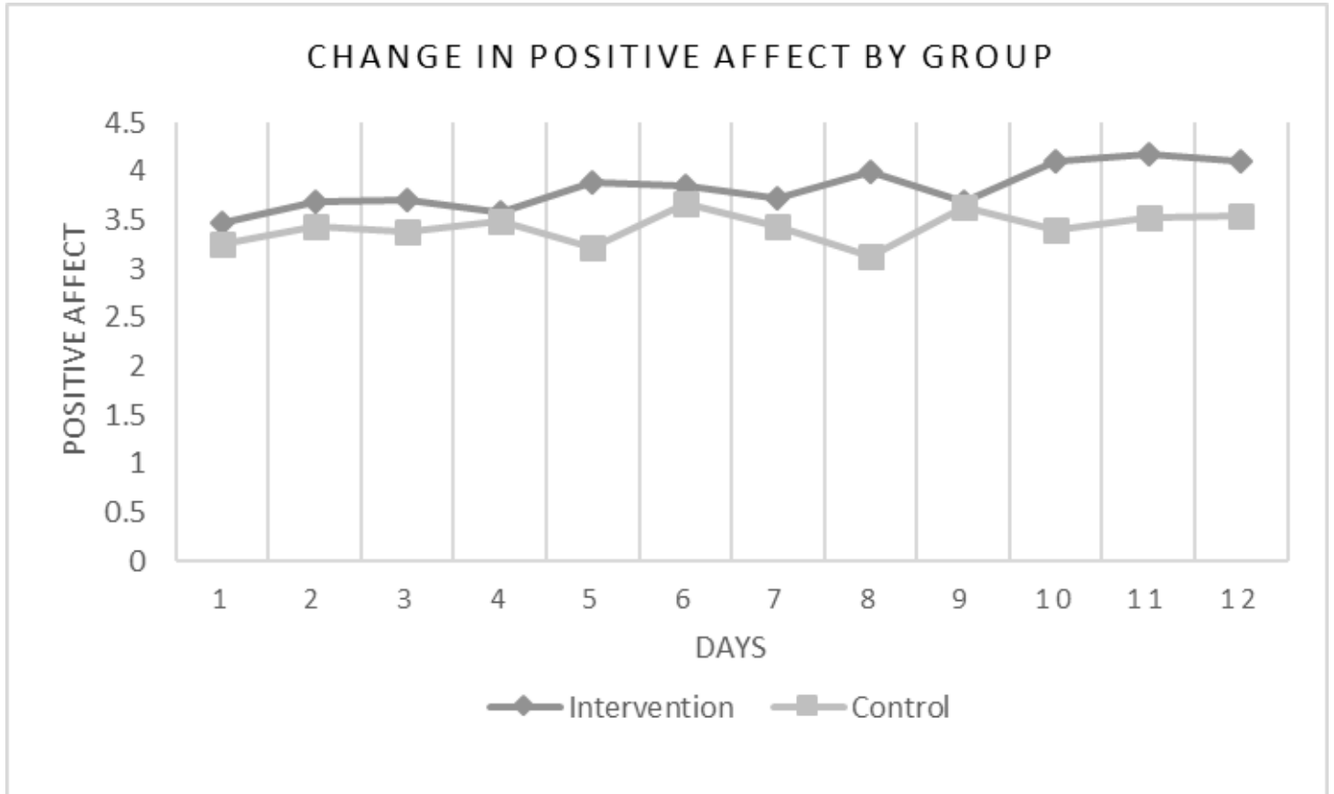


Figure 1. Increase in Positive Affect over 12 intervention days across intervention and control group

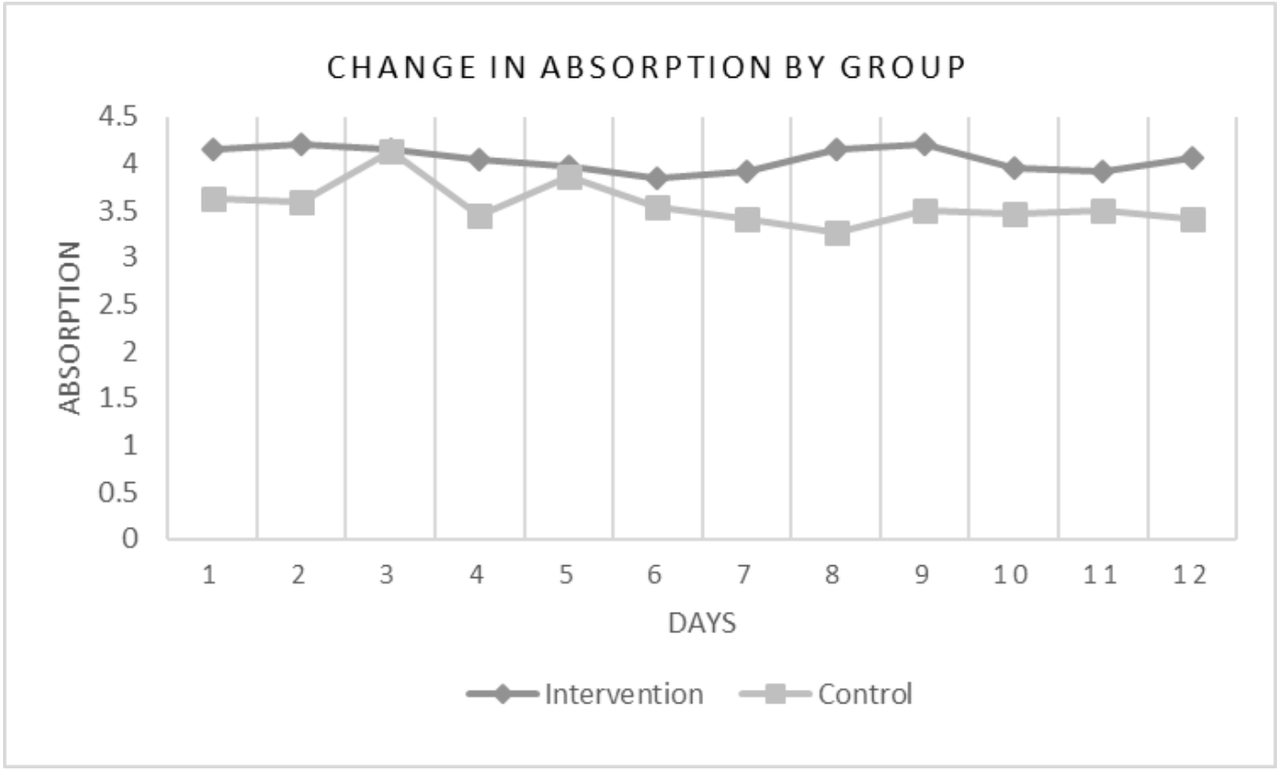


Figure 2. Increase in Absorption over 12 intervention days across intervention and control group

Discussion

The aim of the present study was to evaluate the effects of a brief MBI at work on the daily levels of positive emotions and absorption as two constructs that represent distinct and complementary aspects of psychological wellbeing: hedonic and eudaimonic wellbeing. Results from the linear growth modeling show that participants in the brief MBI program experienced a significant increase in their daily levels of positive emotion through the intervention time when compared to participants in the control group. The growth effect was not linear in nature when comparing between participants in the control and intervention group, which is coherent with previous evidence on the cyclical nature of daily moods and emotions (Fisher, 2019). These results indicate that the MBI protocol was successful at increasing participant's levels of the hedonic component of psychological wellbeing (i.e. positive emotions). Although the underlying psychological mechanism explaining this growth pattern are not addressed in this study variables, our results are consistent with a neurophysiological correlate of changes attributed to systematic exposure to mindfulness practice (Tang et al., 2015). More specifically, to an increased ability perceive, savor and sustain positive emotion through time (Davidson & Schuyler, 2015). From a theoretical perspective, the incremental effects on the growth pattern of daily levels of positive emotions in consistent with the broaden and build theory (Fredrickson & Joiner, 2002). The broaden and build theory poses that positive emotions broaden one's behavioral repertoire, leading to resource accumulation and further positive emotions and gain spirals. Mindfulness can trigger and sustain these gain spirals as it allows individuals to more easily access positive emotional experiences in their everyday lives.

Concerning the changes in daily levels of absorption, there were no significant statistical differences between both groups. Despite this, at a descriptive level, there were observable

differences between the growth curves of each group, suggesting that participants in the intervention group tended to experience slightly higher levels of daily absorption than the participants in the control group. The lack of an effect on the participant's levels of absorption may be due to the widening of the overall attention focus attributed to mindfulness (Brown & Ryan, 2003). However, the available evidence about the effects of mindfulness on cognitive processing and flexibility suggests otherwise. Changes attributed to mindfulness practice experienced in the early stages of training are associated with significant improvements in selective and executive attention (Chiesa et al., 2011). In this sense, mindfulness may act as a relevant promotor of absorption as it facilitates paying sustained attention to specific tasks and overcoming potential distractions present in the work environment. Moreover, the clarification of personal values and professional growth opportunities derived from them is a mechanism that remains to be explored with sufficient depth as a potential explanation. As well, other components of work engagement such as dedication and vigor may be more sensitive to mindfulness practice and provide a better explanatory path for the effects of MBIs on motivation and performance. Since mindfulness is an embodied practice that strives to breach the gap between mind and body established by Cartesian traditions of thought it would be particularly interesting to explore the effects on meta-mechanisms such as decentering or re-perceiving (Shapiro et al., 2006) which can offer new avenues of integrating mindfulness into theoretical models of stress and wellbeing in general (Ngnoumen & Langer, 2016).

To summarize, the work-specific MBI program was partially successful at increasing participants' levels of psychological wellbeing. This resonates with previous iterations of MBIs at work addressing different measures related to psychological wellbeing such as job satisfaction (Hülsheger et al., 2013), and authentic functioning (Leroy et al., 2013). And expands the scope

of MBIs beyond the effect of relief or mitigation of negative aspects of experience and move toward the incorporation of an explicit promotion of psychological wellbeing and optimal functioning.

Specifically, this study contributes to the mindfulness literature by providing evidence on the incremental effects of mindfulness practice on daily levels of positive emotions experienced at work positioning MBIs as effective strategies for promoting worker's wellbeing. As well, provide evidence for the effectivity of brief MBIs formats as a viable alternative or the traditional longer length programs. Finally, we support the endeavor of exploring mindfulness from a positive and engaging perspective looking to expand the existing knowledge of MBIs as tools developed exclusively for the mitigation of physical and mental health problems.

Limitations and Future Studies

Despite the relevant findings reported above, there are a number of limitations present in our study. First, the study is based on self-report measures of distinct measures recollected at the same moment of the day for several weeks. This might lead to biased measurements due to common method and timing of data recollection. In order to address this, we followed the recommendations by Podsakoff, MacKenzie, & Podsakoff, (2012) and tested for a common latent factor for each day of the daily questionnaire. Results of the confirmatory factor analysis indicated that the unrotated single factor solution never explained more than 50% of the total variance across the twelve days of data recollection, suggesting the distinctiveness of the measured constructs.

A second significant limitation is that the study's sample came from a single organization with a particular profile (doctors, nurses and auxiliary personnel), which makes it difficult to generalize the results to other working sectors and activities. Future studies could observe growth

patterns in selected measures of psychological wellbeing along with different occupational groups to attain clarity on the transversal effects of MBI intervention at work.

A third relevant limitation is the lack of randomization and an active control group. These two elements could significantly increase the quality of future studies and improve the adherence to higher reporting standards for intervention studies in the field of work and occupational health psychology (O'Shea et al., 2016). However, incorporating these improvements requires significant resources, and intervention studies lacking in some aspects may still prove to be valuable considering that research in this particular field is still in its infancy (Bartlett et al., 2019; E. Gilbert et al., 2018).

Along the same line, another limitation is related to the small sample size recruited for the study. Once again, the process of design and development of intervention studies is significantly more complicated and resource-consuming than traditional studies focused solely on gathering data. Thus, arguments in favor of bigger sample sizes are to be carefully considered mainly when a research area is in its early development stages.

Finally, the present study supports the case for MBIs at work as effective strategies to promote employee psychological wellbeing. Future studies should strive to achieve higher standards of quality in terms of randomization, sample sizes, and active control groups. Furthermore, a future challenge in the field of MBI at work is to explore specific psychological mechanisms and differential effects through intervention designs incorporating multiple intervention groups with different alternating components.

Conclusion

The promotion of psychological wellbeing is of crucial importance in these times of considerable uncertainty, volatility, and anxiety. Evidence that wellbeing can be promoted through brief and concise intervention protocols is promising; although it is still too early to tell how long into the future these effects might prevail, they are meaningful. Many questions remain about how organizations can successfully implement these practices and what contextual factors may support or hinder their efficacy. PPI interventions at work are a valuable area for future research, as they have the potential for significant positive impact in all kinds of organizations large and small. Future research will help find answers to these questions, as well as new problems to investigate and drive our future path towards meaningful scientific progress in the search for a life well-lived.

Chapter 5

Developing a Multi-Component Positive Psychology Intervention at work: A preliminary investigation on a pilot program

Abstract

The present study aimed to explore the effects of a Positive Psychological Resources Intervention at work from a daily perspective. A multi-component positive psychology intervention program was offered to the staff of a small company as an initiative to improve their wellbeing as well as their job performance. The intervention combined training in diverse positive psychological resources such as mindfulness, character strengths use, meaning-focused coping and psychological capital development. The final participants (N= 39) were asked to fill a daily survey two times a day, at the beginning and the end of their workdays during the 16 days of intervention time. Results from growth modeling analysis suggest that the intervention program was successful in increasing employee daily levels emotional tone, energy, satisfaction with life as well as highlighting the positive effect of daily goal achievement on these variables. The results of the study shed light on the day level outcomes (i.e. emotional tone, energy, and satisfaction) that explain the effectivity of positive psychological intervention programs aimed to psychological resources development at work as well as supporting the use of multicomponent positive psychology interventions.

Keywords: Psychological Positive Intervention, Psychological Resources, Mindfulness, Character Strengths, Diary Study

Positive psychology interventions (PPIs) are defined as intentional activities aimed at cultivating positive feelings, behaviors, and cognitions (Sin & Lyubomirsky, 2009). Extensive literature reviews suggest that they are effective strategies to enhance psychological wellbeing and diminish depressive symptoms in clinical populations (Bolier et al., 2013; Sin & Lyubomirsky, 2009; White et al., 2019). PPIs applied to the work context have gotten considerable interest in the last years due to their potential as tools to increase desirable outcomes related to health and psychological wellbeing, as well as diminishing undesirable outcomes such as stress and fatigue (Salanova et al., 2013b). A recent meta-analysis suggests that PPIs at work are effective at fostering psychological wellbeing and performance, although their effect sizes tend to be rather small and inconsistent along the different types of interventions considered (Donaldson et al., 2019). Thus, the effectivity of PPIs directed at working populations seems to be diminished in comparison to the effects they have on a broader audience that incorporates students and clinical populations. This differences on the effects for different populations can be related to a number or reasons. First, working populations are expected to show lower levels of depressive symptoms and higher levels of wellbeing than clinical populations, therefore diminishing potential impact of PPIs. Second, the majority of PPIs at work focus on a single specific component (i.e., gratitude, character strengths) and lack variability in their activities which in turn can diminish adherence of participants who do not resonate with the content and fail to tackle hedonic adaptation, that is, levels of psychological wellbeing that return to their starting point after any positive circumstantial change (Lyubomirsky et al., 2005). Third, the majority of PPIs at work are not contextualized and adapted to working populations which have different needs and characteristics than clinical patients.

Sin & Lyubomirsky (2009) already suggested a decade ago using a combination of multiple intervention strategies combined. Specifically, to tackle the effect of hedonic adaptation and sustain the positive effects of interventions on psychological wellbeing (Lyubomirsky, Sheldon, & Schkade, 2005). Better intervention designs can accomplish this by introducing change and variability in the activities and exercises taught and trained during the interventions process (Sheldon & Lyubomirsky, 2006). As well, the research on PPIs shows that participants who self-select for participation result in increased effect sizes of intervention effects (Sin & Lyubomirsky, 2009). Thus, providing a flexible and varied offer of tools, activities, and strategies that participants can engage with according to their individual preferences and qualities, as well as their job characteristics, greatly increases both the participation and chance of success of an intervention program at work. Despite these suggestions, the literature on multi-component interventions is still scarce even though they seem to be frequently employed in practice.

These limitations are important, because the effects of PPIs on different positive outcomes such as psychological and emotional wellbeing can be a great asset to organizations and workers alike. Organizations that invest in their workers' health and wellbeing are better prepared to face the fast-paced changes, uncertainty, and recurring moments of crisis that define our modern world, as well as more likely to adapt and achieve outstanding results (Salanova et al., 2012). Workers who experience higher levels of psychological wellbeing are more likely to achieve higher levels of performance while staying healthy at the same time and sustaining their work ability into the future (Peiró et al., 2019; Wright & Cropanzano, 2007). And teams that foster emotional wellbeing have access to a richer repertoire of social resources and skills (Peñalver et al., 2017). Thus, the potential impact of PPIs at work is of great importance to the field of Positive Organizational Psychology as a strategy to promote healthier, happier, and more productive workers that can help

teams, and organizations achieve outstanding results (Donaldson et al., 2015). Furthermore, the available studies on PPIs at work exclusively evaluate the interventions' effects by comparison between different participants. This approach can be problematic because intervention effects are measured based on a static frame that leaves out of the picture how the intervention process is actually experienced by each individual as it happens. Thus, this study aims to evaluate the effects of a multi component PPI on a group of workers' levels of wellbeing from a daily perspective.

Psychological Wellbeing at work from a daily perspective

Psychological wellbeing is a broad concept that captures different elements that reflect positive functioning. It includes elements such as affective feelings and cognitive judgments individuals make about the quality of their lives (Diener et al., 2016), as well as broader aspects such as vitality, purpose in life, personal growth, and positive relations with others (Ryff & Singer, 2008). Psychological well-being is not stable: It fluctuates and changes within short spans of time (e.g., days and weeks), and it can increase or decrease over longer periods of time (e.g., months and years) (Sonnentag, 2015). From this perspective, in the following lines, we describe the daily outcomes representing different aspects of psychological wellbeing that we seek to focus through our intervention model. When referring to the affective component of psychological wellbeing from a daily perspective, we are talking about a subjective feeling state that includes moods such as happiness or sadness (Frijda, 1993). Moods are defined and distinguished by their hedonic tone, with some of them being positive (e.g., relaxed, happy, calm) and some negative (e.g., sad, angry, anxious). Moreover, moods are temporary states that tend to be relatively enduring and pervasive (Frijda, 1993), thus making them an interesting construct to observe from within-person daily perspective (Ohly et al., 2010).

Another element of psychological wellbeing from a psychophysiological perspective closely related to mood states is fatigue. Fatigue is a state characterized by feelings of tiredness and loss of energy (Hockey, 1997; Matthews & Desmond, 2002). It can also be conceptualized from the perspective of the availability of limited energy or cognitive resources to activate information processing structures and monitoring outcomes related to work tasks (Zohar et al., 2003). And just like moods, it fluctuates affected by different aspects of the working life during the day and week (Sonnentag et al., 2008).

Satisfaction with life reflects the cognitive component of psychological wellbeing, and it is an evaluative judgment about life rather than a positive mood (Diener et al., 2016). As well, it fluctuates during days and weeks, and it is closely related to desirable aspects at work such as increased performance, job satisfaction, and task accomplishment (Cheung & Lucas, 2014; Diener et al., 2016; Sonnentag, 2015).

Taken together, these three elements provide an integrative approach to wellbeing that contemplates the affective, psychophysiological, and cognitive aspects of daily experience.

In addition to analyzing the impact of our PPI protocol on workers' daily levels of the different elements of wellbeing presented above, we seek to analyze the effect of achieving work-related goals can have on them. Goals are internal representations of desired states, such as outcomes, processes, and events (Vancouver & Austin, 1996). Goals represent challenges that may promote personal and professional growth, as well as provide scenarios were workers put to use their skills, knowledge, and resources. The experience of making progress toward one's work goals can be a predictor of positive affective states (Harris et al., 2003; Scott et al., 2010). Thus, we include goal achievement as another important factor to observe as a crucial part of the PPI protocol that we will describe in the following paragraphs.

The Positive Psychological Resources (+PR) Intervention Model

The multi-component intervention program designed for this study builds both on the synergy and variety of the selected components. It's named Positive Psychological Resources (RP+, Recursos Psicológicos Positivos in Spanish), and the main objective of the program is to increase workers' levels of psychological well-being through the development of specific skills and resources through group workshops, homework exercises, and training transfer activities and tools. The RP+ model was developed based on the theoretical framework proposed by

Lyubomirksy et al. (2005) as the architecture of sustainable happiness as well as the broaden and build theory by Fredrickson (2001). The architecture of sustainable happiness theoretical model focuses on three main factors that causally affect chronic levels of psychological wellbeing, specifically: the set point, life circumstances, and intentional activities. The set point refers to the central value within a persons' range in their levels of psychological wellbeing, and it is genetically determined and stable over time, much like temperamental and affective personality traits. Although the set point is constant by definition, a person may fluctuate between upper and lower levels of their own range throughout their lives. Despite this variability, evidence suggests that trying to change an individuals' set point is a highly unfruitful avenue towards increasing psychological wellbeing. The second factor, life circumstances, refers to stable facts of an individual's life. Circumstances relevant for a persons' psychological wellbeing include their geographical and cultural context, as well as the demographic factors and personal history. Up to a point circumstances are subject to change; the increases in psychological wellbeing associated with them seem to be short-termed. This is so mainly because of hedonic adaptation, meaning that individuals get accustomed to permanent circumstances and ease back into their set point. As well,

changes in personal circumstances such as changing living regions, marital status, or jobs can be costly and, in many cases, impossible. Put simply, although life circumstances are relevant, data suggest that changes in life circumstances have limited potential to affect psychological wellbeing in the long run. The third and final factor is intentional activities, which refers to a wide variety of practices or discrete actions individuals can engage with. Intentional activities imply the effort to enact, and when sustained in time, can be the foundation for new habits. They can be categorized into behavioral, volitional, and cognitive activities, although these elements are often intertwined. Furthermore, intentional activities have specific advantages over the two previously presented factors: They are episodic in nature, meaning that individuals may adapt less easily to transient and brief activities in comparison to new circumstances. As well, intentional activities can provide great variety, both in the way people engage with them as well the foci they choose to follow. Additionally, by encouraging individuals to act upon their circumstances, revisiting already know activities with renewed curiosity and a variable time frame, and inviting individuals to invest effort and dedication, intentional activities can directly counteract adaptation. Thus both theory and data suggest that investing time and energy in intentional activities is the most promising pathway to increasing psychological wellbeing while sustaining the increases in time (Lyubomirsky & Layous, 2013; Lyubomirsky et al., 2005). More specifically, in terms of hedonic tone, energy and satisfaction, intentional activities have the potential to positively impact all three aspects of daily psychological wellbeing through different pathways related to the components of the intervention model.

Fredrickson's (2001) broaden and build theory of positive emotions suggests that positive emotions broaden one's behavioral repertoire, leading to resource accumulation (i.e., psychological, physical, or social aspects that facilitate goal- achievement), which further

perpetuates positive emotions and gain spirals. Thus, the positive spiral gain would be initiated by engaging in different intentional activities and sustained through the successive practice of different resources.

The RP+ intervention model consists of five different components that present a wide variety of intentional activities: mindfulness, character strengths, meaning-focused coping, psychological capital, and goal setting. In the next paragraph, we briefly address each one of the roles of the components and the expected effects on the selected outcomes.

Mindfulness

The first component and foundation of the RP+ program is mindfulness. Mindfulness is the awareness that arises from intentionally paying attention to the present moment experience (internal and external) with an attitude of curiosity and acceptance (Bishop et al., 2004). It can be trained through different strategies including mediation exercises and psychoeducation (Hindman et al., 2015; Soler et al., 2014), and it is associated with several different positive outcomes at work both in terms of promoting psychological well-being (for a review see Good et al., 2016). From a theoretical perspective, mindfulness can promote wellbeing through the coupled mechanisms of bringing awareness to the present moment experience and monitoring inner and outer experiences with an attitude of acceptance and low reactivity (Lindsay & Creswell, 2015). Mindfulness practice emphasizes intentionally paying attention to the present moment experience, making it the perfect starting point for any kind of intentional activity (S. L. Shapiro et al., 2006). Simple mindfulness practices can include paying special attention to everyday activities, which infuses them with perceptual depth and richness not commonly available to conscious experience. In this sense, paying attention to present moment daily activities can foster positive hedonic tones (Killingsworth & Gilbert, 2010). As well,

As well, mindfulness can help individuals sustain positive affective states longer and to recover faster from peaks of negative emotion, (Dahl & Davidson, 2019). Along the same line, in a recent meta-analysis on the personal and professional correlates of mindfulness practice with a sample of over 50,000 people Mesmer-Magnus, Manapragada, Viswesvaran, & Allen (2017) reported significant positive correlations with life satisfaction. Thus, we propose mindfulness as the foundation of the RP+ program as the key ingredient that can add depth, presence, and intention to all the other activities related to the rest of the components.

Character Strengths

The second building block of our intervention model is character strengths, specifically the VIA model of 6 virtues and 24 strengths developed by Peterson & Seligman (2004). Character strengths are the psychological processes or mechanisms that define and establish distinguishable routes to displaying one or another of the virtues (Peterson & Seligman, 2004). Character strengths allow individuals to connect with core elements of their true selves and enact values and virtues following their beliefs. Linley and Harrington (2006) argued that when individuals use their signature character strengths, they feel good about themselves, are better able to do what they naturally do best, and work toward fulfilling their potential. Though they are viewed as trait-like, they are subject to being identified, clarified, and developed in varied contexts and situations through deliberate and intentional activities (for a review see Quinlan, Swain, & Vella-Brodrick, 2012). As an intentional activity, character strength practice offers a wider variety of possibilities when looking at the 24 different strengths. Each one of the strengths is a world in itself, and they can be approached from the perspective of signature or characteristic strengths corresponding to each individuals preferences, personality, and value, or as an exploratory exercise discovering new ways to put them into practice (Seligman et al., 2005).

Signature strength use is associated with positive hedonic states, as well as to energy and vigor (Peláez et al., 2019). Similarly, individuals who often engage in strength use and practice report higher levels of satisfaction with life (Miglianico et al., 2019)

Moreover, mindfulness and character strengths seem to be deeply interconnected and positively influence one another. Mindfulness can help individuals utilize their character strengths in a conscious and balanced manner that is sensitive to both context and contingency (Niemiec et al., 2012). On the other side of the coin, character strengths can boost mindfulness practice infusing it with new levels of insight and tools to overcoming difficulties while cultivating a regular practice (Niemiec, 2012).

Meaning Focused Coping

The third element in our intervention model is a meaning-focused coping as a positive reappraisal of stressful events, particularly from the perspective of the mindfulness-to-meaning theory (Garland, Farb, Goldin, & Fredrickson, 2015a), which poses that by changing how one relates to cognitive and affective products of stressful situations, mindfulness increases the inherent human ability to reappraise adverse situations, savor the positive elements of experience, and even contemplate negative and difficult life events as sources of personal and professional growth (Garland, Farb, Goldin, & Fredrickson, 2015b). In a recent study, Garland et al. (2016) found that participants in an eight-week mindfulness-based training course increased their use of positive reappraisal and suggested a positive feedback loop in which mindfulness amplifies positive reappraisal habits, which in turn increases the likelihood that the individual will access mindfulness states in the future. On a different but similar approach, Ortega Maldonado (2018) showed that meaning-focused coping and positive reappraisal mediate the relationship between psychological capital and satisfaction with life.

Psychological Capital

The last component of our intervention model is psychological capital (PsyCap), defined as "an individual's positive psychological state of development characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success" (Luthans, Youssef, & Avolio, 2007, p. 3). The development of PsyCap at work has proven to be a sound strategy to promote psychological wellbeing in terms of positive hedonic tone, energy, and satisfaction. (Avey et al., 2011; Luthans & Youssef-Morgan, 2017). And there is a reasonable amount of evidence on the effectivity of micro-intervention protocols to foster it (Luthans & Youssef-Morgan, 2017; Salanova & Ortega-Maldonado, 2019). Moreover, PsyCap provides an easy to follow step by step framework to establish goal-based professional development plans, which makes it a valuable practical approach to incorporate the other components present in our intervention model in a simple and practical manner.

In synthesis, we aim to establish a multicomponent intervention model that builds upon the synergies present between each and every one of the psychological resources mentioned above in a successive manner. With this additive strategy, we hope to maximize the possibilities of matching specific resources to the particular personalities, needs, and demands of individuals participating in the program, understanding that "one size doesn't fit all." As well, we hope to tackle the effects of hedonic adaptation (Sheldon & Lyubomirsky, 2006) by proposing a series of varied and diverse intentional activities derived from each one of these resources with an emphasis on developing and applying them to the participant's everyday work activities.

The Key of Goal Setting

We propose that establishing meaningful personal and professional development goals can set the stage for individuals to put intentional activities into motion. Goals are internal representations of desired states such as outcomes, processes, and events (Vancouver & Austin, 1996), and setting goals is a means by which individuals establish a meaningful desired outcome that drives their behavior and conscious efforts (Locke & Latham, 2013). This idea is congruent with theoretical frameworks from the field of coaching psychology, which state that the possession and progression towards meaningful goals associated with personal and professional growth are associated with an increased sense of psychological wellbeing (Green & Grant, 2006; Sheldon et al., 2002). Consequently, sustained attainment of work goals might influence changes in psychological well-being over differing time periods and across different aspects of well-being. Aligned with this proposal, available evidence suggests that achievement of personally meaningful goals is associated with positive hedonic tones, activation, and satisfaction (Chen et al., 2019; Harris et al., 2003). As well, the broaden and build theory describes goal achievement as one of the elements that allow incremental growth spirals of positive emotions (i.e., hedonic tone and energy) (Fredrickson & Joiner, 2002). Thus, we believe goal achievement can have a positive impact on the selected day-level components of psychological wellbeing we seek to target.

Methods

Research Approach

A pre-experimental design was used due to the impossibility of setting up a control group. A single intervention group was evaluated by means of a daily questionnaire throughout the intervention program.

Participants and Procedure

The study took place in a Spanish private consulting company dedicated to health risk prevention and ergonomics. The intervention program was offered to the company's staff as an initiative to enhance wellbeing and promote the development of psychosocial resources. Participation was voluntary, and the participants received an individual report at the end of the program.

A total of 50 participants were initially recruited to participate in the program and were distributed in three groups of approximately 15 people each. Thirty-nine out of the initial 50 completed the entire program and returned the completed daily journal (82% completion rate, no significant differences were found in terms of age, gender, and tenure when it came to detecting possible explanations for dropout based on the demographic data). The most frequent alleged reasons for dropout were time constraints and a heavy workload. The final sample (N=39) included 28 (74%) women and 11 (26%) men. The participant's mean age was 37 (SD=8.0), and their tenure in the organization was a mean average of 8.7 years (SD=5.1). 96% worked on a full-time contract, and 81,5% had a bachelor's degree. Means, standard deviations, alphas, and correlations for all variables are shown in Table 1.

The intervention program lasted a total of 5 weeks, and participants attended 4 four-hour consecutive sessions held once a week, and a final two-hour 5th session that focused on training transfer and experience savoring. At the beginning of the first session, the participants were given access to a web-based diary sent daily to their work emails where they were asked to set a work-related daily goal at the beginning of their workday for the duration of the intervention program (N= 16 days), note the particular behavior and feelings related to the personal resource trained and answer the daily questionnaire items at the end of each working day (goal achievement) and before going to sleep (hedonic tone, energy, and satisfaction), and logging homework activities. The specific session rationale and content can are shown in Table 2.

Table 2: Specific session content and structure

Session N°	Rationale	Structure	Homework
1	• Foundations of wellbeing and the science of positive psychology • The role of Mindfulness in cultivating wellbeing • Practicing taking in the good and counting blessings	• Class Orientation (Welcome, Format, Intentions) • Ground Rules • Introductions • Academic input • Sitting meditation • Counting blessing and taking in the good exercises • Explanation of homework • Closing	• Mindfulness of routine activity • Sitting meditation • Counting blessing and taking in the good
2	• What are character strengths • Discovering our own signature strengths • Exploring new ways to put them to action • Enhancing our performance noticing our character strengths at work	• Mindful Movement • Home practice review • Academic input • Discovering character strengths • Developing action plans to utilize character strengths at work in a novel manner • Explanation of homework • Closing	• Body scan or mindful movement • Sitting meditation with focus on breath (10-15 mins) • Mindful strength practice
3	• The balance of demands and resources to cope with stress • Reframing difficult situations through meaning focused coping, mindfulness and decentering	• Sitting meditation • Homework review • Academic input • Balancing demands and resources • Explanation of homework • Closing	• Body scan or mindful movement • Sitting meditation with focus on breath (10-15 mins) • Mindful strength practice • Reframing negative experiences
4	• What is psychological capital • How to put our resources to work in a specific action plan designed to face our demands. • Foreseeing obstacles and planning for alternatives	• Home practice review • Academic input • Psychological capital micro intervention • Explanation of homework • Closing	• Body scan or mindful movement • Sitting meditation with focus on breath (10-15 mins) • Mindful strength practice • Reframing negative experiences • Foreseeing obstacles and planning alternatives
5	• Looking back and savoring significant learning experiences. • Planning for the future, implementing an action plan to develop our positive psychological resources in the future	• Preparing for the future • Emotions, thoughts and behaviors from associated to each specific resource. • Concluding meditation	

Table 1: Means, standard deviation, and correlations between study variables

Variables	Mean	SD	1	2	3	4	5	7	8	9
1. Age	38.89	6.25	-	-	-	-	-	-	-	-
2. Gender	1.28	0.45	.12**	-	-	-	-	-	-	-
3. Education	2.71	0.55	-.01	.12**	-	-	-	-	-	-
4. Contract Type	1.02	0.16	-.28**	-.10**	.08*	-	-	-	-	-
5. Job Tenure	8.33	5.01	.39**	.03	.02	-.24**	-	-	-	-
7. Daily Goal Achievement	5.06	1.27	.07	.06	.06	.09	.08	-	-	-
9. Daily Hedonic Tone	3.83	0.94	.06	.11	.01	.11	.011	.30*	-	-
10. Daily Energy	3.67	0.94	.11	.06	.13	.05	.07	.17*	.63**	-
11. Daily Satisfaction with life	3.86	0.88	.14	.05	.13	.07	.10	.39**	.77**	.62**

N=39 employees over *N*=624 occasions. Day-level data was averaged across 16 days. * $p<.05$, ** $p<.01$

Measures

Daily Goal Achievement by a three-item scale developed for this specific study asking participants to evaluate the degree of achievement of their daily work-related goal set at the beginning of the workday using a 6-point Likert scale (1=*Not achieved*; 6=C*ompletely achieved*; for a similar measure see (Goodman & Svyantek, 1999; Salanova et al., 2012). Cronbach's alphas values across all 16 occasions ranged from .72 to .85 (M=.78).

Daily Emotional Tone was measured by a single-item visual analog scale, each with 5 points from a happy face to a sad face (Fernández-Castro et al., 2017). The estimated average reliability across the 16 occasions was .88, following the method suggested by Wanous & Reichers, (1996).

Daily Energy was measured by a single-item visual analog visual scale of five points from a full battery to an empty battery (Fernández-Castro et al., 2017). The estimated average reliability across the 16 occasions was .77 following the method suggested by Wanous & Reichers, (1996).

Daily Satisfaction with Life was measured by a single item scale developed by Cheung & Lucas (2014) asking participants to evaluate their daily level of satisfaction with life at the end of the day using a 5-point Likert scale (1=*Not satisfied*; 5=*Totally satisfied).* The estimated average reliability across the 16 occasions was .86 following the method suggested by Wanous & Reichers, (1996).

Control Variables where included in all the tested models. Specifically, we included the between-participants mean difference scores for each daily measure, that is, each individual mean score across the 16 days for daily positive emotions, daily satisfaction with life, daily energy and daily goal achievement to each one of the models with these variables at the within-subject level as outcomes. As well, we controlled for group membership, differentiating between the three different locations for the intervention groups. Additionally, we included time (measured in consecutive intervals corresponding to 16 days) modeled in a linear trajectory following the suggestions of Bolger and Laurenceau (2013) when dealing with intensive repeated measures designs.

Results

Data Analyses

Since the recollected data presents an intensive repeated measure structure, we utilized a Longitudinal Growth Modeling analysis approach with two levels following the procedure depicted in Bolger & Laureceau (2013) and Bliese & Ployhart (2002); with daily measurements (Level 1, $N = 624$) nested within persons (Level 2, $N = 39$). All statistical analyses were conducted with IBM SPSS 26 statistical package.

To hypothesize effects on multiple levels of analysis, it is necessary to establish sufficient levels of variability for daily measures both at the between (Level 2) and within-person (Leve 1) levels as indicated by. To address this, we calculated intra-class correlations (ICC) and applied a deviance difference test comparing models with one and two levels for each one of the daily measures. For objective achievement the percentage of variance associated to within-person variability was 83% ($\rho = .17$; $\Delta - 2 \times \log (1) = 26.6$, $p < .001$). For emotional tone the percentage of variance associated to within-person variability was 77% ($\rho = .23$; $\Delta - 2 \times \log (1) = 57.1$, $p < .001$). For energy the percentage of variance associated to within-person variability was 67% ($\rho = .33$; $\Delta - 2 \times \log (1) = 87.2$, $p < .001$). For satisfaction with life the percentage of variance associated to within-person variability was 78% ($\rho = .22$; $\Delta - 2 \times \log (1) = 51.5$, $p < .001$). These results show that there is sufficient variance distributed both at the between and within-person levels for all the daily measures supporting our case for the utilization of LGM modeling to test our hypotheses. The growth modeling sequence was based on recommendations by Bliese and Ployhart (2002) and was repeated for each daily dependent variable (i.e., affective tone, energy, and satisfaction). First, the most parsimonious and best fitting null model for each outcome was established to test the predictors. Given that the longitudinal data had high ICC1 values, indicating between-person variance, we started with a random intercept model. Time was added to the equation and revealed a significant linear relation for daily hedonic tone ($\gamma = .09$, SE = .04, $t = 2.92$, $p = .023$, CI_{95}[.01, .16], and daily satisfaction with life ($\gamma = .13$, SE = .03, $t = 3.72$, $p < .001$, CI_{95}[.06, .19], but not for daily energy ($\gamma = .05$, SE = .04, $t = 1.49$, $p = .135$, CI_{95}[-.02,.12]. The quadratic relation was nonsignificant for daily hedonic tone ($\gamma = .00$, SE = .01, $t = -.032$, $p = .975$, CI_{95}[-.01,.01], daily energy ($\gamma = .00$, SE = .01, $t = .481$, $p = .631$, CI_{95}[-.01,.01], and daily satisfaction with life ($\gamma = .00$, SE = .01, $t = -.375$, $p = .708$, CI_{95}[-.01,.01]. indicating better fit with a linear growth model. Based on net increases in log likelihood ratios denoting better fit of the data, we allowed

for a random slopes model across participants and corrected for autocorrelation. Since the results for daily energy were non-significant is was excluded from further analyses.

Longitudinal Growth Modeling Results

The fixed effects set of parameters presented in Table 3 represent the average participant in the intervention program. These fixed effects are represented by the thick black lines in Figures 1, 2, and 3. The second set of parameters presented in Table 4 are the random effects. These describe variability at two levels of analysis: The upper level they reflect the degree to which individuals vary from the group averages, and at the lower level they are the extent wo which individual data points vary from the values predicted by the model. The upper-level random effects are represented in Figures 1, 2, and 3 by the variability in individual regression lines from the group average.

The model parameters presented in Table 3 offers the following interpretations: (1) the intercept is the daily level of hedonic tone, energy or satisfaction with life at week one of the intervention program for the whole intervention group, (2) the group estimate is the difference in levels of hedonic tone, energy or satisfaction with life at week one between the three different subgroups, (3) the time estimate is the change in levels of hedonic tone, energy or satisfaction with life over the 16 days of the study, and (4) daily goal achievement is the effect of goal achievement on the slopes of each one of the outcome measures.

The results indicate there were no significant differences between the subgroups at the starting point of the intervention program for the three outcomes, that is, daily hedonic tone (γ =.01, SE = .06, t =-.059, p =.178, CI_{95}[-.11,.13]), and daily satisfaction with life (γ =-.003, SE = .078, t =-.389, p =.90, CI_{95}[-0.19,0.12]). All subgroups showed no differences at the starting point of the intervention with an initial level of 2.01 units for daily emotional tone and 1.60 units for daily satisfaction, all on a scale of 1 to 5. The linear growth pattern indicated a statistically significant rate of increase for two out of three outcome variables throughout the intervention process, specifically for relation for daily hedonic tone (γ =.09, SE = .04, t =2.92, p =.023, CI_{95}[.01, .16], and daily satisfaction with life (γ =.13, SE = .03, t =3.72, p <.001, CI_{95}[.06, .19], but not for daily energy (γ =.05, SE = .04, t =1.49, p=.135, CI_{95}[-.02,.12]. This indicates an average growth of .09 units for daily hedonic tone, and .13 units for daily satisfaction with life. As well, there were

no differences in the slopes between different subgroups for daily hedonic tone (γ =.002, SE = .007, *t* =-.378, p =.96, CI_{95}[-0.01,0.01], and daily satisfaction with life (γ =.003, SE = .006, *t* =-.582, p =.56, CI_{95}[-0.01,0.01].

Analysis also showed that daily goal achievement had a positive effect on daily hedonic tone (γ =.38, SE = .08, *t* = 5.905, p < .001, CI_{95}[.23,.53]), and daily satisfaction with life (γ =.49, SE = .07, *t* = 7.27, p < .001, CI_{95}[.36,.63]), while controlling for group membership, time and between subject mean scores of each corresponding outcome variable.

The model parameters presented in Table 4 represent the extent to which individuals vary from the predicted model. Variance for the rate of change is large in relation to its standard error, indicating that there is significant heterogeneity between the individuals participating in the intervention program. The rate of change variance (time) for hedonic tone is .09, and corresponds to an SD of .30, which indicates that 95% of the participants vary +-.60 units from the slope of the group. The rate of change variance daily satisfaction with life is .13, and corresponds to an SD of .36, which indicates that 95% of the participants vary +-.72 units from the slope of the group. The variability between participants in the predicted slopes in Figures 1 and 2 is consistent with these numbers.

Additionally, the residuals for each one of the daily outcomes were not auto-correlated, as indicated by the estimate reported at the bottom of Table 4.

Discussion

The purpose of this study was to evaluate the effects of a multi-component positive psychology intervention program on a sample of workers' daily levels of psychological wellbeing. A pre-experimental design was utilized with no control group to explore the feasibility of the intervention program and establish preliminary evidence for its effects.

Results showed participants in the program experienced a consistent increase over time of different elements of psychological wellbeing, namely, positive hedonic tone, and satisfaction with life. Although overall results are mainly positive, there was great heterogeneity in the results. This heterogeneity suggests that variability in the rates of increase in different daily aspects of psychological wellbeing between participants is substantial, indicating that some participants benefited greatly from the program while others did only up to a certain point. Despite the

variability, we can say that the results of the intervention program are mainly positive and support our initial exploratory aim to establish preliminary evidence in favor of the efficacy of multi-component interventions aimed at increasing and sustaining positive effects over time. As well, we found achieving daily work-related goals had a significant positive effect of daily levels of hedonic tone, energy, and satisfaction with life. Daily goals served as a platform to integrate the practice of each one of the specific tools developed through the intervention program into daily activities and routines. Examples of this integration are responding to urgent emails as a mindfulness practice noticing our breath, feelings, and thoughts, as well as the words chosen to respond, or exploring solutions to a specific problem as a chance to exercise our curiosity and creativity as a signature character strength. The positive effect of goal achievement on different elements of psychological wellbeing suggests that the integration of new tools and skills was possibly successful.

The results presented in this study are consistent with previously reported findings. For example, Harris et al. (2003) on a study with call center workers found that attaining daily goals at work had a positive effect on pleasurable affect (hedonic tone), and that this relation became stronger when goals were personally important and coupled with personal and professional development challenges. Similarly, Sheldon et al. (2002) found that students who participated in a goal-attainment program throughout the academic semester experienced increases in their levels of psychological wellbeing and vitality. From a specific resource integration perspective, Pogrebtsova et al. (2017) showed that integrating mindfulness with positive re-appraisal techniques (meaning-focused coping) was more successful at increasing students' levels of positive affect (hedonic tone) than using positive re-appraisal alone.

Theory-wise, this study supports the value of intentional activities as a key component to cultivate wellbeing over time. However, it is necessary to explore how different types of intentional activities function in different cultural contexts as well as on different types of jobs. In our particular case, the results stand for the use of multicomponent PPIs for the workers in the services sector. A second contribution is adding to the broaden and built theory literature by highlighting the positive effect of goal achievement on daily levels of psychological and emotional wellbeing as a promoter of incremental growth over time. Third, we contribute to the PPI literature by highlighting the use of multicomponent interventions utilizing a synergistic approach to the interaction between the different components.

Limitations and Practical Implications

Despite the positive results, the present study has significant limitations. First and foremost, the lack of a control group to compare the effects of the intervention is perhaps the biggest limitation of the study. This was so mainly because of sample size limitations, the shift-based nature of work in the participating organization, and the intensive measure nature of our chosen design. These three elements taken together account for our difficulty in setting up a proper control group. As well, we consider daily resource practice a time a rather broad measure to reflect the active components of the intervention and will strive to include more specific and tailored measures that seek to mirror in a clearer manner each one of the interventions' components.

Second, the study is based solely on self-reported measures. This could lead to potential common-method bias problems. Following Podsakoff, MacKenzie, & Podsakoff (2012), we tested for a common latent factor among all the study variables using varimax rotated factor analysis in SPSS. Results yielded three different factors explain 67% of the variance, clearly distinguishing between our measures (daily resources practice time, daily goal, and daily subjective wellbeing). Moreover, ICC coefficients indicated sufficient intra-personal variability in all outcome variables.

Another important limitation to acknowledge is the sample used. Even though the workers were established in three different locations, they all belonged to the same company. Therefore, they shared significant common ground in terms of psychosocial factors and contextual work characteristics. This makes our results hard to generalize, and thus our study requires replication in different sectors, organizations, and even different cultural contexts (Van Zyl et al., 2019), to properly confirm our tested hypotheses.

Finally, another of the biggest points for improvement is the inclusion of facilitators that are not an active part of the study design and data recollection process in order to avoid a leader-expectation effect were participants feel compelled to report data points biased towards the desired intervention effects.

The intervention combined training in four related positive psychological resources. Future research may consider exploring different combinations of these components or adding others related positive psychological resources (e.g., job crafting, work meaning, and gratitude). Future

research may also seek to replicate these findings using control or delayed intervention group designs to investigate what effect exactly these components, alone or together, make.

In spite of these obvious limitations, the present study allows for several different practical implications. To begin with, we support the claim for multi-component interventions at work aimed at developing psychological resources. For practitioners and researchers alike, this opens up new opportunities to explore synergies between different existing evidence-based intervention tools and protocols and look for paths of integration. This is a promising path in the development of integrative and multilevel (i.e., individual, collective, and organizational) intervention programs.

Second, we highlight the relevance of establishing congruent work-related goals as platforms for practicing and developing new skills and resources. Tackling one of the great problems of intervention programs in general, that is, the transference of training to work. Following this idea, HRM practitioners should strive to integrate congruent goal-setting in their intervention programs aimed at developing new skills in their workforce.

Last but not least, our study sheds light on the relevance of the sustained practice of diverse psychological resources and its effect on worker's psychological and subjective wellbeing, as well as their capacity to achieve challenging and meaningful goals. In terms of practice, this idea highlights the relevance of incorporating strategies for sustaining resource practice and development in time as a key element in the design and implementation of successful intervention programs aimed at increasing performance and subjective wellbeing.

Conclusion

On a final thought, the rise of intervention programs aimed at enhancing worker’s wellbeing through the cultivation of personal resources is a relevant trend that has a promising road ahead, with significant challenges to be addressed and questions to be answered. This is a small contribution to the first steps taken in that path, which hopefully will bring many relevant and useful findings in the years to come. Thoughtful design, development, and evaluation of intervention programs is an extremely valuable and understudied area of knowledge in the field of work and organizational psychology. Thus, it shows great promise as an area of future research.

Table 3: Fixed Effects of LGM models predicting daily hedonic tone, daily energy and daily satisfaction with life

	Hedonic Tone					Satisfaction with Life				
Fixed Effects (intercepts, slopes)	γ	SE	*t*	*p*	CI_{95}	γ	SE	*t*	*p*	CI_{95}
Intercept	2.01	.40	5.00	<.001	1.21,2.80	1.60	.36	4.47	<.001	.89/2.30
Time	.085	.04	2.92	.023	.01/.16	.125	.03	3.72	<.001	.06/.19
Group	.011	.06	-.059	.178	-.11/.13	-.021	.05	-.387	.701	-.13/.09
Daily goal achievement	.382	.08	5.05	<.001	.23/.53	.493	.07	7.27	<.001	.36/.63

N =39 employees

Table 4: Random Effects of LGM models predicting daily hedonic tone, daily energy and daily satisfaction with life

	Hedonic Tone					Satisfaction with Life				
Random Effects (intercepts, slopes)	γ	SE	*z*	*p*	CI_{95}	γ	SE	*z*	*p*	CI_{95}
Level 2 (between-person)										
Intercept	.352	.13	2.66	.008	.16/.73	.214	.10	2.25	.024	.09/.51
Slopes	.001	.01	1.07	.284	.01/.05	.001	.01	.933	.351	1.01/3.91
Intercept and Slope	-.010	.01	-1.35	.177	.01/.05	-.006	.01	-.844	.399	-.02/.01
Level 1 (within-person)										
Residual	.533	.04	12.01	<.001	.45/.63	.439	.04	12.08	<.001	.37/.51
Autocorrelation	.058	.07	.850	.395	-.07/.19	.057	.07	.823	.410	-.08/.19

N =39 employees

Figure 1. Spaghetti plot of average (thick) and subject-specific (thin) time courses for hedonic tone

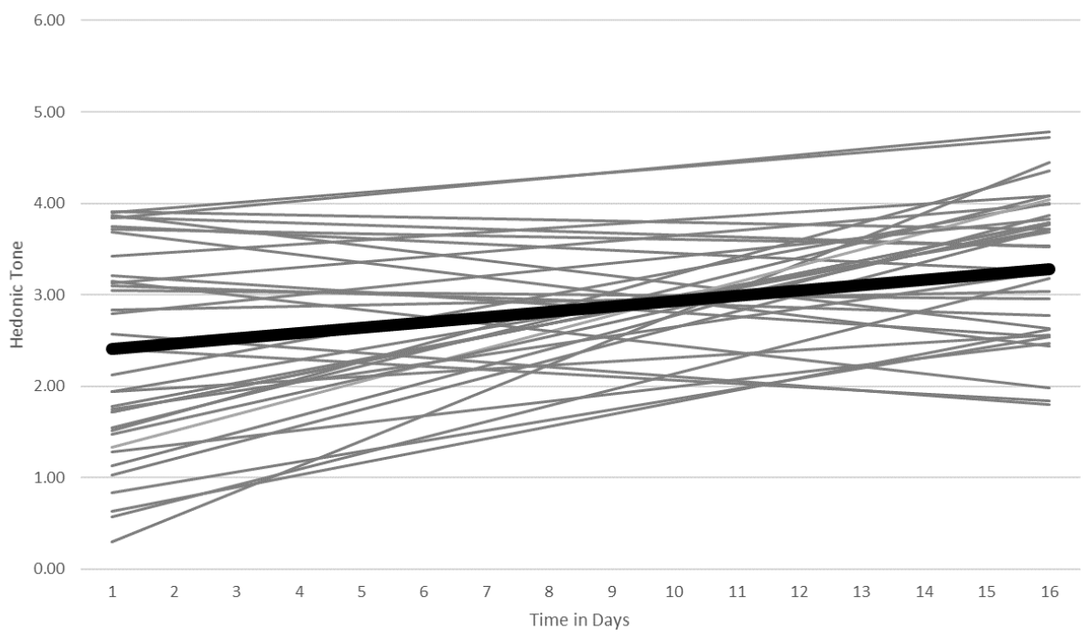
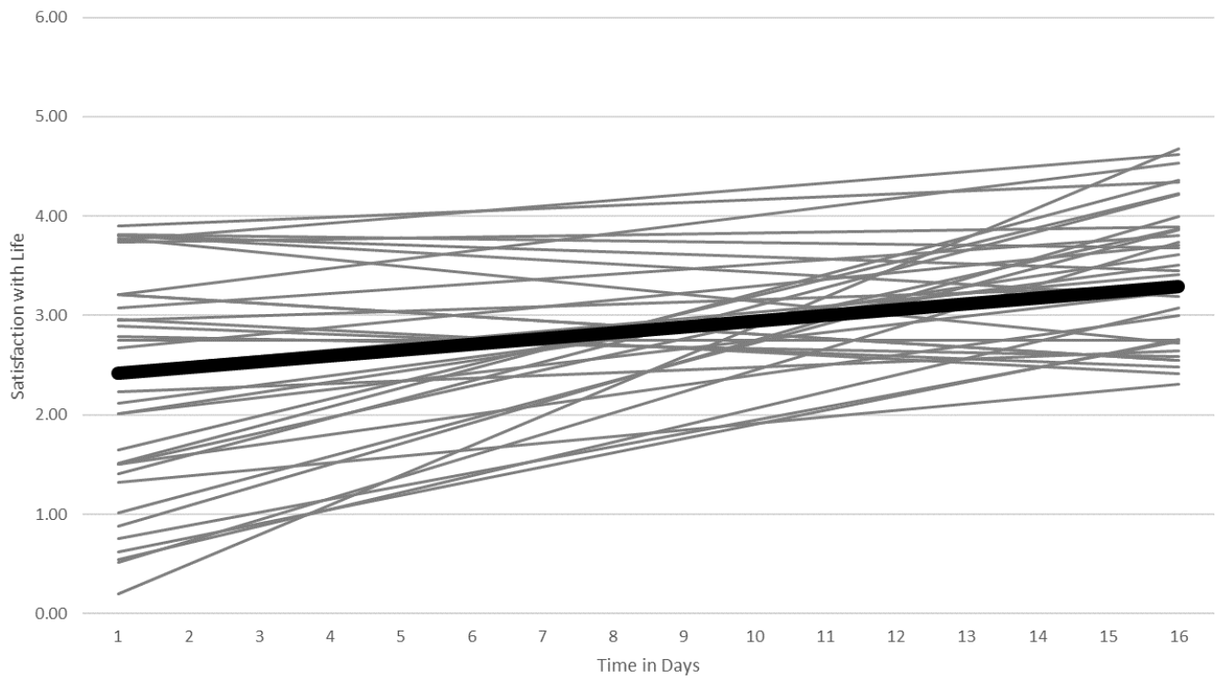


Figure 2. Spaghetti plot of average (thick) and subject-specific (thin) time courses for satisfaction with life



Chapter 6

Differential effects of mindfulness-based intervention programs at work on psychological wellbeing and work engagement

Abstract

Two different mindfulness-based interventions were deployed in a sample of white-collar workers to explore the differential effects on different facets of participant's mindfulness, dimensions of psychological wellbeing, work engagement, performance, and stress. A total of twenty-eight participants completed one of the different programs, and their results were compared between groups and against twenty-seven participants randomly allocated to a waiting list control group. Results suggest both mindfulness intervention programs were successful at increasing participants' levels of psychological wellbeing, work engagement, and performance, as well as decreasing their levels of stress. Significant differences were found between the two programs in all outcome variables. Results suggest that brief and customized mindfulness interventions at work are as successful as lengthier programs.

Keywords: Mindfulness at work, psychological wellbeing, work engagement, performance, stress, intervention.

Mindfulness is defined as an inherent ability of the human mind to pay attention to present moment experiences adopting an attitude characterized by curiosity, openness, and acceptance (Bishop et al., 2004). Different theoretical models of mindfulness propose it is composed of different elements or "facets" that can be developed as skills through systematic training deployed in the format of mindfulness-based interventions (MBIs) (Carmody & Baer, 2008; Creswell, 2017; Lindsay, Young, et al., 2018; Lindsay & Creswell, 2019; Sansó et al., 2019). Workplace-delivered MBI programs are increasingly showing to be an effective strategy to help employees manage stress and improve their mental health (Bartlett et al., 2019; Eby et al., 2016b). The majority of published studies on MBIs at work focuses on decreasing stress and mental health-related outcomes such as anxiety, psychological distress, and burnout (Lomas et al., 2017), and the systematization of the available data initially supports this claim (Heckenberg et al., 2018). As well, mindfulness seems to have an impact both on physiological and psychological pathways that explain these effects (Chiesa et al., 2011; Lao et al., 2016). And, overall, it seems to be a promising strategy to address a wide array of problems that arise from the characteristics of many of today's jobs and workplaces (Good et al., 2016)

However, the available knowledge of MBIs at work is limited in at least three crucial aspects. First, most of the MBI evaluation studies in a work-related setting focus mainly on healthcare workers (Bartlett et al., 2019). Due to the nature of their work, they experience high levels of job demands and increasing levels of psychosocial risks that lead to conditions such as depressive symptoms, compassion fatigue, and burnout (Alexandrova-Karamanova et al., 2016; Gleichgerrcht & Decety, 2014; Parola et al., 2017; Pisljar et al., 2011). This scenario makes healthcare workers ideal candidates to test the alleged effects of MBIs; particularly more so in this moment in time when healthcare systems worldwide are under greater levels of pressure than ever. Unfortunately, this bias has produced a lack of studies focusing on different working populations, such as white-collar workers. White-collar workers comprise the majority of the workforce in services driven economies (EUROSTAT, 2017; U.S Bureau of Labor Statistics, 2019). They are also exposed to significant levels of job demands and psychosocial risks due to the preeminently mental rather than physical effort associated with the characteristics of their work (Bridger & Brasher, 2011; Fila et al., 2017). Thus, they are also good candidates to benefit from MBIs at work. And services-

based organizations may benefit from it too in the form of increased performance and productivity, and decreased levels of stress-derived health complications in their workforce.

A second limitation has to do with the relatively small number of studies inquiring about outcomes related to mental health that go beyond the simple reduction of negative aspects of human experience such as stress, depression, and anxiety. Mental health is not only related to the absence of disease o but also the presence of wellbeing (WHO, 2005). When it comes to MBIs, it is necessary to adopt a more holistic perspective of mental health the includes "non-clinical" approaches such as psychological wellbeing and work engagement (Ivtzan et al., 2016). Psychological wellbeing is a multidimensional construct that englobes different aspects of life, such as meaning, relations, and personal growth (Ryff & Singer, 2008). These aspects are represented by specific domains or "dimensions" that are distinct from one another but taken together reflect the different elements that make up a "good life"(van Dierendonck et al., 2007). Along a similar line, work engagement poses a work-specific approach to psychological wellbeing that is characterized by high levels of energy and willingness to invest effort in one's work, experiencing a sense of enthusiasm, pride and challenge, and being fully concentrated and happily engrossed in one's work (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Although a distinct construct on its own (Schaufeli & Salanova, 2011), work engagement could be considered a domain-specific measure of psychological wellbeing. As well, it reflects the eudaimonic component of psychological wellbeing in the sense that it is related to sustained effort, motivation, and optimal functioning (Straume & Vittersø, 2014). Psychological wellbeing and work engagement are not only relevant in terms of health but also regarded as critical aspects to attain a better performance both at the individual (Sonja Lyubomirsky, King, et al., 2005; Zelenski et al., 2008) and organizational levels (Salanova, Llorens, Cifre, & Martinez, 2012; Salanova & Llorens, 2016; Taris & Schreurs, 2009).

A third limitation of work-related MBIs literature has to do with the scarcity of measurements of performance and productivity. Mindfulness has been positively associated with different improvements in cognitive ability and emotional-regulation as possible pathways to improve performance (Chiesa et al., 2011; Holzel et al., 2011). As well as with specific work-related concepts such as sunken cost bias (Hafenbrack et al., 2014). Preliminary evidence suggests there might be a positive effect of mindfulness on performance, but more research on this relation is

needed in order to clarify the benefits of MBIs in regard to this element. (Good et al., 2016; Kersemaekers, Rupprecht, Wittmann, & Tamdjidi, 2018).

Taken together, the three distinct limitations mentioned above make a strong case for the development and evaluation of MBIs deployed at work that focus on different samples beyond healthcare workers, that include measurements of wellbeing both with a broad perspective and contextual specificity, and that incorporate to the very least some measure of performance.

Finally, it is necessary to stress the fact that there is a wide variety of different MBIs available ranging from fully standardized programs (Kabat-Zinn, 2013) to full-on customizations (Wolever et al., 2012). This poses an important dilemma when choosing what type of MBI protocols to deploy, and striking a balance between commitment to established guidelines and customization to improve adherence and success becomes a challenge on its own. Callings for refinement in MBI intervention research point out the value of utilizing standardized intervention protocols when possible while at the same advocating for the development of specific MBI protocols adapted to specific workplace characteristics and worker's needs (Lomas et al., 2017). In this sense, there is a significant gap related to the evaluation of differential effects between established MBI programs compared to customized MBI versions developed for specific contexts and populations.

In light of the established gaps existing in regard to the MBIs at work literature, we propose the present study. The aim is to test the differential effects of two types of MBIs at work. More specifically to compare a customized, and brief work-specific MBI program with a longer duration MBI program based on the MBCT (Segal et al., 2001) and Self-Compassion (Barnard & Curry, 2011; Neff, 2003) in a white-collar worker population, looking at the potential differences on the effects of participants levels of mindfulness, psychological wellbeing, work engagement, stress and performance.

Considering the existing literature on MBIs at work, and their positive impact on levels of mindfulness, different measures of wellbeing (i.e., subjective psychological wellbeing, work engagement, and job satisfaction among others; Lomas et al., 2017), performance (Coo & Salanova, 2018), and diminishing stress (Bartlett et al., 2019), we propose the following hypotheses.

Hypotheses

*H*1: Both MBI programs (i.e., MSCBI and MPSM) will increase participants levels of different facets of mindfulness (i.e., acting with awareness) in comparison with participants in the control group.

*H*2: Both MBI programs (i.e., MSCBI and MPSM) will increase participants' levels of different dimensions psychological wellbeing (i.e., environmental mastery) and work engagement (i.e., vigor) in comparison with participants in the control group.

*H*3: The MBCT-based program (MSCBI) will be more effective at increasing participants' levels of different faces of mindfulness and diminishing their levels of stress.

*H*4: The MBI work-specific program (MPSM) will be more effective at increasing participants levels of different dimensions of work engagement (i.e., vigor) and performance (i.e., in-role performance).

Method

Participants and Procedure

Workers from two different organizations (Organization A and Organization B) in the industrial production area were invited to participate in distinct MBI programs as workplace initiatives to manage stress and enhance wellbeing. Back office staff from both organizations were invited to enroll voluntarily in the intervention programs, which were held during working hours in the office premises of each organization. For Organization A, participants answered a paper-based questionnaire prior to the beginning of the intervention program, and one week after the last training session. For Organization B, participants were asked to answer an on-line questionnaire distributed via e-mail previous to the beginning of the intervention programs, and one week after the last session of the program. The questionnaire included an informed consent form complying with the latest data management regulations, and the study was sanctioned and approved by the first author’s host university ethics committee. After answering the questionnaire, participants from the two different organizations were randomly allocated in an intervention or on a waiting list control group that did not participate in alternative intervention procedures but participated in each organization's specific MBI program after the first intervention group finished.

Organization A offered an 6-week MBI based on the MBCT(Segal et al., 2001) standardized intervention including a component of self-compassion (Neff, 2003) labeled “Mindfulness and

Self-Compassion Intervention" (MSCBI); Organization B offered a brief 3-week MBI custom program integrating MBCT (Kuyken et al., 2010) and ACT (Hayes et al., 2006) labeled "Mindfulness and Positive Stress Management" (MPSM). The MPSM program description and rationale can be found in Table 1 and 2. For the MSBCI refer to the MBCT manual (Segal et al., 2001).

A total of 22 participants were allocated in the MBI program offered by Organization A, from now on labeled as MBSR Group, 13 of them completed the intervention program and the pre-post evaluation. They were 45.5 (*SD*=7.25) years on average, and 41.4% were female. A total of 20 participants were allocated in the MBI program offered by Organization B, from now on labeled as MPSM Group. Of the initial group, 15 participants completed the program and pre-post evaluation. They averaged 41 years of age (*SD*=6.92), and 52% were female. Finally, 18 participants from Organization A, and 15 participants from Organization B were allocated in the waiting list control group, for a total of 33 participants in the control group. They were 38.5 (*SD*=10.72) years old on average, and 51% were female. Cronbach's α and correlations for all variables at pre and post-intervention times are shown in Tables 3 and 4.

Table 1: MPSM Intervention Program Specific session content and structure

Session N°	Length in hours	Rationale	Structure	Homework
1	4	• What is stress? Personal experiences, physical and emotional correlates. • Physiology of the stress response and its relation to human evolution. Fight, Flight or Freeze. • What is mindfulness? Brief body scan exercise, sharing personal experiences. • Definition and established benefits of mindfulness practice, and self-directed neuroplasticity. • Mindfulness and stress management through de-centering and re-appraisal of stressful situations.	• Class Orientation (Welcome, Format, Intentions). • Ground Rules • Introductions. • Experiences of Stress and brief presentation. • Body scan. • Benefits of mindfulness and mechanisms of action. • Sitting meditation with focus on breath • Re-appraisal exercise.	• Body scan and/or sitting meditation. • Mindfulness of routine activity. • Practice log.
2	4	• Mindfulness and character strengths. Mindfulness as a pathway to cultivating our best-possible self. • Understanding and discovering our signature strengths as well as those we would like to develop. • Identifying strengths in action, exploring new ways of practicing them, and imagining new pathways to cultivate new strengths. • Using strengths to overcome obstacles and difficult situations.	• Brief body scan check-in. • Home practice review. • Mindfulness and character strengths introduction. • Discover, identify and. practice personal strengths. • Explore and establish new behaviors to practice strengths	• Body scan and/or mindfulness of routine activity. • Mindful character strengths practice. • Practice log.
3	4	• Identifying areas of balance/unbalance in our work life. • Identifying patterns of recurring thoughts/behaviors that lead to stress and difficulty • Balancing character strengths with mindfulness practice for optimal use. • Developing specific action plans to address and transform our patterns into professional and personal growth opportunities. • Exploring our best possible self into the future as a guideline to follow in our professional and personal growth. • Choosing intentional and committed actions to cultivate our inner and outer balance.	• Brief body scan check-in. • Homework review • Balance/Unbalance in our working life • Balancing character strengths • Action plan development • Best Possible Self • Final thoughts	• Body scan and/or mindfulness of routine activity. • Mindful character strengths practice. • Best Possible Self in balance. • Practice log.

Table 2: MSCBI Intervention Program Specific session content and structure

Session N°	Length in hours	Rationale	Structure	Homework
1	2	• Reflecting on the social context and our daily habits. • How does our mind work? Attentional default network and the automatisms present in our mind. • Identifying the contents of the mind: thoughts, emotions and feeling. Decentering • What is mindfulness? • Formal and informal practice	• Class Orientation (Welcome, Format, Intentions). • Ground Rules • First mediation practice. Observing our inner experience and motivation. Why are we here? • Introductions. • Practice. What does our mind do when it is doing nothing? • What is mindfulness? Basic concepts introduction • Raisin mindful eating meditation • Collective reflection and conclusions. Instructions to keep practicing during the week.	• Brief pauses during the day (1-3 min). What are you doing? How do you feel? What are you thinking? • Mindfulness of breathing and awareness of inner experience (7-10 min). • Mindful eating • Practice Log
2	2	• Reflection on the main obstacles for practice • Understanding how to calm our mind. Focused attention on our body. Our breath as our ally. • Differentiating the Self as a subject and the self as an object. • Mechanisms of action and benefits of practice.	• Body Scan (10 min) • Group reflection on the main obstacles while trying to practice at home. • Monitoring hand movements. • Group reflection on the different perspectives of the self (subject vs object). • Mechanism of action. Benefits from a neurophysiological, mental and behavioral perspective. From reaction to choice. • Collective reflection and conclusions. Instructions to keep practicing during the week.	• Brief pauses during the day (1-3 min). • Body Scan, Calm and Hand monitoring mediations. • Informal practice of daily activities • Daily gratefulness and practice log
3	2	• How to train a stable mind? Attention regulation. • Learning to stabilize or mind through mindfulness of breathing. • Identifying the right attitude in mindfulness practice. • Developing other forms of being present in our daily life. • Identifying the link between thoughts and emotions.	• Mindfulness of breathing. • Review of homework. • Attention stability and breathing as a regulator. • What kind of attitude to maintain during practice? • Mindful movement and walking	• Brief pauses during the day (1-3 min). • Mindfulness of breathing. Observing thoughts, and mindful movement (15 min). • Informal practice of daily activities

			• Mindfulness of breathing focusing on the belly. • Observation and experimentation. Mindful eating black chocolate. Where I put my attention, I create my reality. • Collective reflection and conclusions. Instructions to keep practicing during the week.	• Mindfulness of social media and tv consumption • Gratefulness Letter • Practice Log
4	4	• Being present through our senses. Broadening our perspective. • Training our mind for clarity. • Knowing our relation with our thoughts. • Exploring acceptance and differentiating between primary and secondary pain. • Interpersonal Mindfulness, mindful listening and talking.	• Mindfulness of the 5 senses including thoughts. • Review of homework. • Presentation on mental clarity. • Mindfulness of nose focused breathing. • Presentation on acceptance and primary and secondary pain. • Mental Experiment Yes/No Repeat. • Mindful listening and talking in couples. • Collective reflection and conclusions. Instructions to keep practicing during the week.	• Mindfulness of the 5 senses including thoughts. Acceptance and Openness. • Informal practice of daily activities. Mindful listening. • Mindfulness of difficulties and resistance. Practicing letting go. • Practice Log
5	4	• Basic skills for wellbeing. • Identifying emotional balance systems: Alert, achievement and connection. • Developing empathy. • Understanding compassion and self-compassion. • Developing gratitude.	• Mindfulness at the end of the day. • Review of homework. Main obstacles and difficulties. • Emotional regulation system by Gilbert. • Self-Compassion model by Neff. • Presentation and reflection on compassion and self-compassion, impermanence of relations, and video. • Mindfulness of self-care • Collective reflection and conclusions. Instructions to keep practicing during the week.	• Mindfulness at end of the day and self-care. • Kindness towards oneself and others. • Support videos. • Random acts of kindness. • Practice Log.
6	4	• Compassion and adherence to practice. • Last reflection and clearing doubts about compassion. • Distinguishing between different kinds of relations. Broadening circles.	• Mindfulness of gratitude. • Review of homework. • Presentation and reflection on compassion.	• Kindness and compassion, as well as any other of the exercises practices during the course.

		• Acquiring guidelines to sustain our practice.	• Kindness and compassion mediation in couples. • Group reflection on key learning points. • Guidelines to keep practicing independently in our daily lives • Collective reflection and conclusions.	• Autonomous weekly practice group. • Maintaining what we learned.

Table 3: Cronbach's α and correlations for all sub scales at pre intervention time

		α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mindfulness (FFMQ)	Acting with awareness	.88	-														
	Describe	.79	.018	-													
	Non-Judgement	.68	.052	-.158	-												
	Non-Reactivity	.75	.121	.154	.135	-											
Subjective Psychological Wellbeing (SPWB)	Self-Acceptance	.73	.189	.172	.339**	.163	-										
	Positive Relations	.75	.284*	.224	.182	.178	.477**	-									
	Autonomy	.77	.134	.223	.411**	.241	.489**	.484**	-								
	Environmental Mastery	.67	.323**	.276*	.139	.272*	.662**	.526**	.548**	-							
	Purpose in Life	.84	.204	.287*	.153	.119	.642**	.508**	.541**	.699**	-						
	Personal Growth	.71	.148	.124	.021	.118	.334**	.333**	.313*	.416**	.407**	-					
Work Engagement	Vigor	.78	.126	-.141	-.134	.007	.139	.049	-.020	.252*	.379**	.162	-				
	Absorption	.88	.104	-.195	.075	-.011	.058	.025	.039	.077	.155	.275*	.526**	-			
	Dedication	.83	.115	.026	-.122	-.012	.200	.131	.005	.287*	.332**	.196	.801**	.495**	-		
Performance	In-role Performance	.76	.012	-.028	-.091	.067	.013	-.002	-.039	-.164	-.023	.094	.040	.327**	-.013	-	
	Extra-role Performance	.74	-.118	.015	-.015	-.117	.253*	-.003	.109	.177	.306*	.122	.419**	.367**	.422**	.449**	-
Stress		.73	-.108	-.171	.139	.235	.111	-.075	-.035	-.173	-.109	.060	-.002	-.091	.049	.076	-.002

* p <.05; ** p <.01

Table 4: Cronbach's α and correlations for all sub scales at post intervention time

		α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mindfulness (FFMQ)	Acting with-awareness	.78	-														
	Describe	.80	.219	-													
	Non-Judgement	.83	.622**	.108	-												
	Non-Reactivity	.72	.225	.196	.285*	-											
Subjective Psychological Wellbeing (SPWB)	Self-Acceptance	.85	.134	.443**	.043	.332*	-										
	Positive Relations	.72	.232	.362*	.157	.313*	.351*	-									
	Autonomy	.72	.430**	.264	.213	.154	.144	.498**	-								
	Environmental Mastery	.78	.437**	.301*	.286*	.139	.322*	.660**	.627**	-							
	Purpose in Life	.84	.004	.369**	-.006	.220	.733**	.417**	.154	.398**	-						
	Personal Growth	.75	.275	.286*	.141	.111	.477**	.685**	.533**	.750**	.510**	-					
Work Engagement	Vigor	.83	.271	.042	.151	.022	-.068	.230	.204	.384**	.074	.191	-				
	Absorption	.92	.455**	.157	.399**	.183	.249	.259	.411**	.337*	.245	.219	.634**	-			
	Dedication	.83	.128	.153	.151	.116	.169	.248	.198	.302*	.334*	.260	.724**	.631**	-		
Performance	In-role Performance	.87	.160	.088	.216	-.073	.034	.415**	.194	.357*	.074	.228	.370**	.440**	.358*	-	
	Extra-role Performance	.83	.232	.264	.131	.143	.277	.441**	.184	.294*	.270	.274	.510**	.597**	.636**	.654**	-
Stress		.79	-.312*	.186	-.290*	-.084	.188	-.112	-.266	-.027	.317	-.002	.033	-.013	.101	-.027	.014

* p <.05; ** p <.01

Measures

Mindfulness was measured using the Spanish validation of the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Cebolla et al., 2012; Coo Calcagni & Salanova, 2016). It is a 20-item short version scale that assesses five different dimensions of Mindfulness, understanding it as higher-order factor. The five dimensions comprise: Observe (OBS), Describe (DES), Act with Awareness (AW), Non-Reactivity to own thoughts (NR), and Non-Judgment to own experience (NJ). Participants indicate the frequency of 20 behaviors on a 7-point Likert scale (0=*almost never*, 6=*almost always*). Items include "I'm good at finding words to describe my feelings" and "I'm easily distracted." Half of the items are reverse scored. Following Baer et al. (2008), we decided to exclude the Observe subscale in order to facilitate the detection of training-related changes in mindfulness. The scale presented good internal reliability.

Psychological Wellbeing was measured using the short version Spanish adaptation of the Psychological Wellbeing Scale (SPWB; Díaz et al., 2006; Ryff & Singer, 2008). The 29-item scale assesses six distinct domains of wellbeing (Self-acceptance [SE], Positive relations [PR], Autonomy [AT], Environmental mastery [EM], Purpose in life [PL], and Personal growth [PG]). Participants rate their levels of agreement/disagreement regarding different statements using a six-point Likert scale (1=*totally disagree*;6=*totally agree*). Sample items include "I feel like many of the people I know have gotten more out of life than I have" [SE], "Most people see me as loving and affectionate" [PR], "I have confidence in my opinions even if they are *contrary to the general consensus"* [AT]," I am good at juggling my time so that I can fit everything in that needs to get done" [EM], "I enjoy making plans for the future and working to make them a reality" [PL], and "I have the sense that I have developed a lot as a person over time" [PG]. The scale presented good internal reliability.

Work Engagement was measured using the Spanish version of the Utrecht Work Engagement Scale in its 9-item version (UWES9; Schaufeli, Bakker, & Salanova, 2006; Schaufeli & Bakker, 2003). The scale is composed of three dimensions: (I) Vigor, (II) Dedication and (III) Absorption. Participants indicate the frequency of specific feelings and behaviors on a 6-point Likert scale (1=*almost never*, 6=*almost always*) including "At my job, I feel strong and vigorous" and "I'm enthusiastic about my job". The scale presented good internal reliability.

Performance was measured using the six-item scale from Goodman & Svyantek (1999) that assess in-role and extra-role performance using a 7 point Likert type scale (0=*almost never*, 6=*almost always*). The items include, "I achieve my work-related objectives" and "I go beyond my official responsibilities to help my teammates." The scale showed acceptable internal reliability.

Stress was measured using the Spanish validation of the Perceived Stress Scale in its 10-item version (S. Cohen et al., 2014; Trujillo & González-Cabrera, 2007). Participants respond to the frequency of specific statements about thoughts and feelings during the previous month on a 5-point Likert scale (0=Never, 5=Very often). Sample items include, "During the last month ¿How frequently have you felt nervous or stressed." The scale acceptable internal reliability.

Data Analysis

First, a one-way analysis of variance test (ANOVA) was conducted to establish sufficient baseline similarity for all variables between the three groups (MPSM, MSCBI, and Control). Non-significant results for this would allow for further comparison of the intervention effects, including post-intervention measurements for all groups.

Second, in order to analyze the effects of the different MBI protocols, we conducted a multivariate analysis of variance (MANOVA) with a 3x2 (Group x Time) design with three distinct group conditions ((MPSM, MSCBI, and Control) as our between-subjects variables and two time points of measurement (Pre and Post-intervention) including all outcome variables. In order to a finer-grained description of the differential effects we introduced each one of the outcome variables per sub-scales (e.g., For Mindfulness we used the sub-scales of Describe (DES), Act with Awareness (AW), Non-Reactivity to own thoughts (NR), and Non-Judgment to own experience (NJ)).

With the MANOVA analysis, we seek to observe the differences in the mean scores of each one of the outcome variables across the different groups. The effect represented by time will reflect if the MBI protocols were effective from a general perspective, the group effect will point out if there exist any differences between groups at the general mean level, and the interaction term of group*time will establish if there are differences related to the type of intervention participants underwent and its effects.

Effect sizes were calculated using eta-squared (η2) and Cohen's *d* with specific cut-off points established at .02, .13, and .26, for small, medium, and big effects, respectively (Cohen, 1992).

Results

As a first step, demographics and outcome variables were compared across groups at baseline level (pre-intervention). There were no significant differences across groups with regard to gender distribution $\chi^2(3)=1.723$, $p=.632$. As well there were no significant differences in age groups distribution between groups $\chi^2(9)=9.058$, $p=.432$. Finally, there were no significant differences between the different groups for all the outcome variable's subscales for specific results see Table 5.

Second, with the MANOVA, we observed the effects for time, group, and the interaction term of time*group. Results indicate a significant effect for time along with a big effect size, Pillai's trace = 0.683, F(16, 31) = 4.174, p < .001, η2=.684, suggesting significant changes in all groups across time. For group, significant effect a big effect size was found, Pillai's trace = 1.206, F(32, 64) = 3.035, p < .001, η2=.603, indicating the there are significant differences across all groups. And last, there was a significant effect for the interaction term time*group with big effect size, Pillai's trace = 1.287, F(32, 64) = 3.509, p < .001, η2=.643, indicating the changes across time are related to the type of intervention participants took part off.

Third, we analyzed the follow-up ANOVAs for each one of the outcome variables specific sub-scales representing their dimensions in order to establish detailed differences between groups. First, we analyzed the sub-scales corresponding to mindfulness. Looking at the results of the time*group interaction, results suggest that significant differences between groups across time could be observed for the sub-scales of Describe (F(2, 46) = 4.342, *p* =.019, η2=.159), Act with Awareness (F(2, 46) = 4.342, *p* =.024, η2=.149) and Non-reactivity (F(2, 46) = 5.032, *p* =.011, η2=.180), all with large effect sizes. No significant differences in mean scores between groups cross-time were detected for the sub-scale of Non-judgement (F (2, 46) = 1.819, *p* =.174, η2=.073). Results are of follow up ANOVAs are shown in Table 6. Close inspection of mean scores suggests that MSCBI group was more effective at increasing the Describe and Non-reactivity dimensions of mindfulness while MPSM group was more effective at increasing Acting with Awareness. Mean scores and standard deviations are shown in Table 7. These effects become more evident when

looking at the graphical representation of the interaction term presented in Figure 1. In light of these results, we deem Hypothesis 1 supported and established partial support for Hypothesis 3.

For the sub-scales of subjective psychological wellbeing, the results suggest that significant differences between groups across time could be observed for the sub-scales of Positive Relations ($F(2, 46) = 5.815$, $p = .006$, $\eta 2 = .202$), Autonomy ($F(2, 46) = 3.261$, $p = .047$, $\eta 2 = .124$) and Environmental Mastery ($F(2, 46) = 5.375$, $p = .008$, $\eta 2 = .189$), once again with large effect sizes for all the variables. On the contrary, no significant effects were observed for the sub-scales of Self-Acceptance ($F(2, 46) = 1.358$, $p = .267$, $\eta 2 = .056$), Purpose in Life ($F(2, 46) = 0.248$, $p = .782$, $\eta 2 = .011$) and Personal Growth ($F(2, 46) = 3.472$, $p = .094$, $\eta 2 = .055$). When looking at the different groups means scores, MPSM group was more effective at increasing the al three dimensions that showed significant differences. The graphical representation of the results is shown in Figure 2. In summary, these results support Hypothesis 2

Concerning the sub-scales of work engagement, significant differences between groups across time could be observed for the sub-scales of Vigor ($F(2, 46) = 15.189$, $p = <.001$, $\eta 2 = .011$) and Absorption ($F(2, 46) = 11.000$, $p = <.001$, $\eta 2 = .324$), but not for Dedication ($F(2, 46) = 2.644$, $p = .082$, $\eta 2 = .103$) with large sized effects for all variables. When observing the different groups' mean scores, the MPSM group was more successful at increasing both dimensions of work engagement. Furthermore, this effect is graphically represented in Figure 3. These results provide partial support to Hypothesis 4.

For the sub-scales of performance, both In Role Performance ($F(2, 46) = 5.211$, $p = 009$, $\eta 2 = .185$) and Extra-Role Performance ($F(2, 46) = 3.336$, $p = 044$, $\eta 2 = .127$) exhibited significant differences between groups across time with large size effects. Closer inspection of mean scores suggests that the MSCBI group was more effective at increasing In-Role Performance. On the other hand, the MPSM group was more effective at increasing Extra-Role Performance. The graphical representation of this effect is presented in Figure 4. In line with the previous paragraph, these results provide full support for Hypothesis 4.

Finally, significant differences between groups across time were observed for Stress ($F(2, 46) = 4.667$, $p = 014$, $\eta 2 = .169$). Mean scores suggest that the MSCBI group was slightly more effective at reducing stress than the MPSM group. Graphical representation of this effect is also presented in

Figure 4. In addition, with the results related to the differences between groups on the different dimensions of Mindfulness, these results provide full support to Hypothesis 3.

Table 5: Pre-intervention one-way ANOVA test with group as comparison factor

Scales	Dimensions	df_{effect}	df_{error}	F	*P*
Mindfulness (FFMQ)	Describe	2	61	0.15	.857
	Act with Awareness	2	61	2.02	.140
	Non-Judgement	2	61	1.18	.316
	Non-Reactivity	2	61	0.54	.586
Psychological Wellbeing (SPWB)	Self-acceptance	2	61	0.18	.839
	Positive relations	2	61	0.12	.890
	Autonomy	2	61	0.84	.436
	Environmental mastery	2	61	0.49	.618
	Purpose in life	2	61	0.66	.523
	Personal growth	2	61	0.98	.380
Engagement (UWES)	Dedication	2	61	0.06	.946
	Vigor	2	61	0.40	.961
	Absorption	2	61	0.53	.590
Performance	In role Performance	2	61	0.20	.821
	Extra Role Performance	2	61	1.00	.905
Stress (PSS)		2	61	1.70	.192

Table 6: Follow-up ANOVA test for the effects of Time, Group and their Interaction on Outcome Variables

		Time					Group					Time*Group				
Scales	Dimensions	df_{effect}	df_{error}	F	*P*	*η2*	df_{effect}	df_{error}	F	*P*	*η2*	df_{effect}	df_{error}	F	*P*	*η2*
Mindfulness (FFMQ)	Describe	1	46	3.423	.071	.069	2	46	1.413	.254	.058	2	46	4.342	.019	.159
	Act with Awareness	1	46	1.703	.198	.036	2	46	12.858	<.001	.359	2	46	4.035	.024	.149
	Non-Judgement	1	46	0.650	.424	.014	2	46	4.740	.013	.171	2	46	1.819	.174	.073
	Non-Reactivity	1	46	21.057	<.001	.314	2	46	10.515	<.001	.314	2	46	5.032	.011	.180
Psychological Wellbeing (SPWB)	Self-acceptance	1	46	12.126	.001	.209	2	46	0.778	.465	.033	2	46	1.358	.267	.056
	Positive relations	1	46	1.357	.243	.021	2	46	3.004	.059	.116	2	46	5.815	.006	.202
	Autonomy	1	46	4.245	.045	.084	2	46	9.162	<.001	.295	2	46	3.261	.047	.124
	Environmental mastery	1	46	2.012	.163	.042	2	46	6.598	.003	.223	2	46	5.375	.008	.189
	Purpose in life	1	46	0.276	.602	.042	2	46	0.404	.670	.017	2	46	0.248	.782	.011
	Personal growth	1	46	2.341	.080	.034	2	46	1.925	.157	.077	2	46	3.472	.094	.055
Engagement (UWES)	Dedication	1	46	3.670	0.62	.074	2	46	0.106	.899	.005	2	46	2.644	.082	.103
	Vigor	1	46	2.376	.130	.049	2	46	0.568	.571	.024	2	46	15.189	<.001	.398
	Absorption	1	46	26.371	.<.001	.364	2	46	2.183	.124	.087	2	46	11.000	.<.001	.324
Performance	In role Performance	1	46	0.749	.391	.016	2	46	0.741	.482	.032	2	46	5.211	.009	.185
	Extra Role Performance	1	46	6.628	.013	.126	2	46	1.320	.277	.054	2	46	3.336	.044	.127
Stress (PSS)		1	46	3.271	.077	.066	2	46	.178	.837	.008	2	46	4.667	.014	.169

Table 7: Pre – Post Intervention and Control Groups Scores– Mean (SD)

Scales	Dimensions	Intervention Group [MPSM]		Intervention Group [MSCBI]		Control Group	
		Pre	Post	Pre	Post	Pre	Post
Mindfulness (FFMQ)	Describe	3.27(1.16)	3.67(1.08)	3.35(0.80)	4.23(0.59)	3.42(0.49)	3.22(1.29)
	Act with Awareness	3.52(0.48)	4.08(0.83)	3.54(1.05)	3.74(0.66)	3.17(0.42)	2.88(0.50)
	Non-Judgement	3.53(0.46)	3.64(0.56)	3.68(0.99)	3.89(0.91)	3.38(0.41)	3.11(0.62)
	Non-Reactivity	3.03(0.48)	3.17(0.41)	3.03(0.78)	4.10(0.63)	2.88(0.36)	3.08(0.71)
Psychological Wellbeing (SPWB)	Self-acceptance	4.45(0.88)	4.83(0.76)	4.60(0.90)	5.06(0.52)	4.55(0.55)	4.63(0.85)
	Positive relations	4.13(0.78)	4.57(0.79)	4.15(1.11)	4.43(0.82)	4.26(0.81)	3.48(0.93)
	Autonomy	3.98(0.91)	4.63(0.50)	3.65(1.08)	4.07(0.63)	3.61(0.78)	3.31(0.86)
	Environmental mastery	4.26(1.10)	4.96(0.39)	4.21(0.79)	4.15(0.49)	4.04(0.59)	3.85(0.67)
	Purpose in life	4.49(1.00)	4.52(1.02)	4.77(0.76)	4.78(0.85)	4.55(0.75)	4.69(0.79)
	Personal growth	5.45(4.09)	5.43(0.44)	4.56(0.95)	4.73(1.00)	4.60(0.67)	4.57(0.63)
Engagement (UWES)	Dedication	4.31(0.82)	4.64(0.70)	4.39(0.90)	4.58(0.99)	4.40(0.81)	4.56(0.88)
	Vigor	4.35(0.79)	4.97(0.54)	4.39(0.60)	4.43(0.99)	4.42(0.73)	4.32(0.68)
	Absorption	4.11(0.74)	4.80(0.69)	3.87(0.59)	4.64(1.07)	4.00(0.71)	3.90(0.75)
Performance	In role Performance	5.08(0.58)	5.17(0.46)	5.03(0.50)	5.25(0.57)	5.12(0.49)	4.89(0.45)
	Extra Role Performance	4.70(1.00)	5.16(0.63)	4.58(0.83)	5.07(0.92)	4.59(0.82)	4.57(0.84)
Stress (PSS)		2.72(0.53)	2.33(0.33)	2.57(0.37)	2.30(0.43)	2.47(0.40)	2.65(0.33)

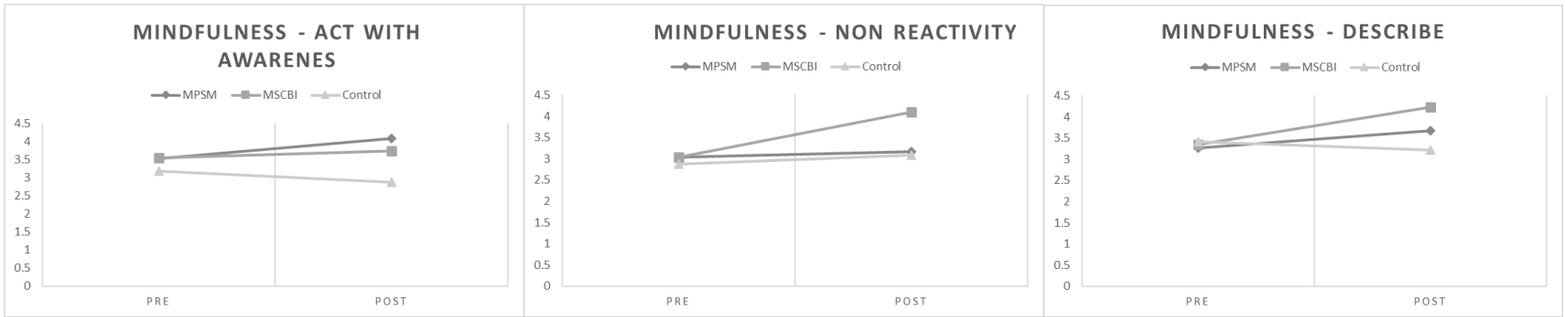


Figure 1. Means Estimated for the MBSR Group, MPSM Group, and Control Group on Pre-Intervention and Post-Intervention Time Points, for Mindfulness Dimensions with Statistically Significant Interaction Effect

Figure 2. Means Estimated for the MBSR Group, MPSM Group, and Control Group on Pre-Intervention and Post-Intervention Time Points, for SPWB Dimensions with Statistically Significant Interaction Effect

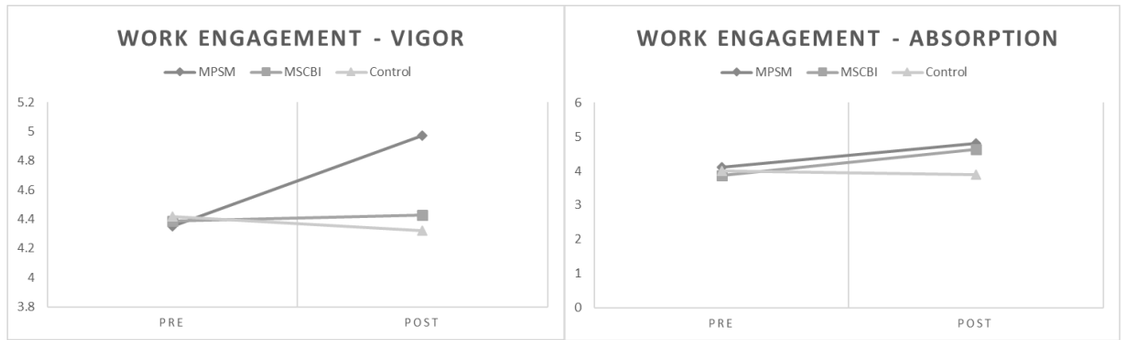


Figure 3. Means Estimated for the MBSR Group, MPSM Group, and Control Group on Pre-Intervention and Post-Intervention Time Points, for Work Engagement Dimensions with Statistically Significant Interaction Effect

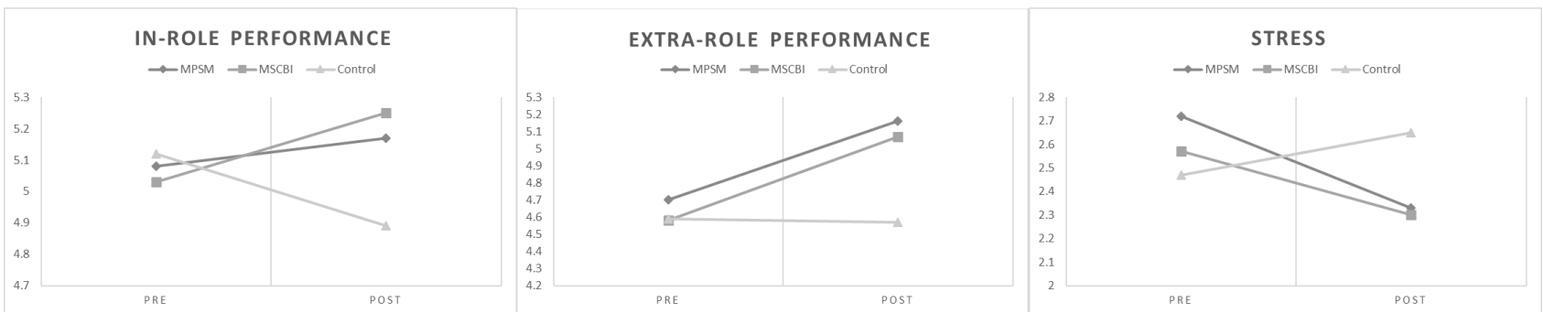


Figure 4. Means Estimated for the MBSR Group, MPSM Group, and Control Group on Pre-Intervention and Post-Intervention Time Points, for Performance Dimensions and Perceived Stress with Statistically Significant Interaction Effect

Discussion

The aim of this study was to observe the effects of two different types of MBIs (a lengthier MSCBI program, and a custom work-specific MPSM program) on the levels of mindfulness, psychological wellbeing, work engagement, performance, and stress in a sample of white-collar workers who belonged to two different organizations.

To begin, we seek to establish basic levels of efficacy for both MBI intervention programs when comparing them to a waiting-list control group. Overall, the results suggest that both MBI programs were effective at increasing the levels of mindfulness, psychological wellbeing, work engagement, and performance, as well as diminishing the effects of stress when compared to the control group. The results are in line with previous research and build the case for MBI at work as a successful strategy to increase employee health and wellbeing from a broad perspective that goes beyond the pure amelioration of negative aspects of experience.

Looking into the differential effects of each one of the programs, the MSCBI program was significantly better at increasing the mindfulness facets of describe and non-reactivity towards inner experience. This suggests that both the length and depth of the program could be important factors to develop specific mindfulness-related skills. And traditional MBI programs may be better suited for this particular task due to those specific factors.

Nonetheless, the custom MPSM program proved to bet slightly better at increasing the acting with awareness mindfulness facet. In the case of this particular difference, we hypothesize it might be related to the use of psychoeducation methods and exercises in tandem with mediation practices that could enhance the sense of awareness present experience. An example of this is the use of character strengths emphasizing self-observation of specific values and behaviors, as well as

establishing concrete action plans in the exploration of new ways to practice signature strengths as a mindfulness curiosity exercise.

Concerning the different dimensions of psychological wellbeing, the MPSM program turned out to be slightly better than the MSCBI program at increasing the facets of autonomy, environmental mastery, and positive relations. In this particular case, we believe the narrative focus from ACT (Hayes et al., 2006), which builds around the development of intentional and values-committed actions, adds a significant explicit difference that accounts for this difference when it comes to increased levels of autonomy and environmental mastery. Deliberate focus on developing new behaviors related to personal values and positive characteristics of the self may have a more significant impact on the sense of autonomy since it is related to evaluating oneself according to personal standards (Ryff & Singer, 2008). MSCBI is also related to specific actions to detect maladaptive patterns of behavior related to stress. Still, these don't necessarily come explicitly in the form of approach goals or developing new behaviors. Along the same line, the capacity of feeling a sense of control over complex and changing scenarios reflected by environmental mastery is present in the MPSM rationale. The elaboration of specific action plans to cope and re-appraise difficult situations utilizing the participants' inner resources is a perfect example of this idea. About the changes in positive relations, the differentiation of effects is not as clear between both programs since the differences are marginal. Both programs are deployed in a group setting that invites participants to share personal experiences and insights, incorporating vicarious learning experiences as an important factor.

About the differences on work engagement., our predictions were clearly supported by the results. The differential effects were particularly more explicit on the dimension of vigor. We believe this effect to be related to the incorporation of character strengths in tandem with

mindfulness. Individuals who act upon their personal strengths tend to be more energized and engaged (Peláez et al., 2019). For the dimension of absorption, the differences are barely noticeable, and even though the scores for the participants from the MPSM group are a little higher in the post-intervention measurement time, the participants of the MSCBI group saw a more substantial increase from pre to post measurements. Thus, we believe the differences are not so relevant in this particular aspect.

With regard to performance, the results showed that the MSCBI program was slightly better at increasing in-role performance. More prolonged exposure to systematic meditation practices can be a significant factor when accounting for this difference. Executive processing and attentional capacities that change with meditation practices are dose-dependent (Lao et al., 2016), therefore a larger dose may have a significantly larger effect in the specific processes that may support individual in-role performance. On the other hand, MBSP program was better at increasing extra-role performance, which revolves around behaviors that go above and beyond established goals and responsibilities. Again, we believe this is linked to incorporation of character strengths to mindfulness practice, since individuals that have the possibility to practice and enact their values in work-related scenarios tend to go beyond the norm in terms of effort and engagement with their work and companions (Peláez et al., 2019).

Next, he results regarding the decrease in levels of stress are in line with the existing literature pointing to the benefits of MBIs as effective strategies to help workers manage stress (Bartlett et al., 2019; Khoury et al., 2015b). In this line, it is no surprise that the MSCBI program was more effective at diminishing participants' stress, considering that the rationale and focus of the program are built around this particular goal. However, it is important to note that shorter programs can be successful as well. They should be treated the initial steps in the stress

management process and should be sustained in time utilizing complementary strategies such as workplace-based wellbeing promotion programs that underline the importance of sustained practice in time to reap the benefits of mindfulness.

Finally, this study presents significant contributions to the study of MBIs in the workplace setting. First, it expands the effectivity of MBIs to the population of office or white-collar workers proving that not only healthcare workers can benefit from mindfulness and related skills in their daily activities at work. Second, we support the claim for the positive effects of MBIs beyond the mitigation of negative aspects of human experience and broaden the scope towards the inclusion of wellbeing related constructs such as work engagement and psychological wellbeing. This proposal is aligned with the calling for bridges between contemplative traditions and psychology articulated towards the pursuit of our highest potential or best possible self (Cebolla, Enrique, Alvear, Soler, & Garcia-Campayo, 2017; Coo & Salanova, 2018). Third, we provide evidence in favor of mindfulness changing individuals' perception of their own capacity and performance. This claim is not only rooted in subjective experience changes in relation to workers' own work capacity, but also to the changes that occur in terms of stress management, executive processing, and cognitive flexibility improvements and their neurophysiological correlates (Holzel et al., 2011).

Last but not least, our study supports the use of customized MBIs adapted to the work context. Even though there is great value in the use of standardized programs, adaptations of the basic building blocks of MBI to the participants' experience is key when designing interventions for success. Underlying this notion is the fact that not all intervention designs will work the same for different groups of people, and thus is valuable work to establish legitimate and effective

customized approaches that take into account what works form whom under what circumstances (Nielsen & Miraglia, 2016).

Limitations

Besides the contributions our study seeks to offer, there are also a significant number of limitations. First, the use of solely self-report measures is one of the recurring weaknesses of intervention studies in general. In our case, we could not access objective measures of performance, nor implement behavioral measures of mindfulness due to constraints imposed by the organizations we worked with. However, in an effort to provide an argument in favor of the validity of our data and following the recommendations of Podsakoff, MacKenzie, & Podsakoff, 2012) to address common-method bias, single latent factor tests were performed for both pre and post measurements and in both cased the amount of variance explained by the unrotated single factors solution was less than 20% indicating the distinctiveness of each measure.

Another critical limitation has to do with the small size of the samples. Intervention studies require a great deal of time and resources from the researchers and the participating organizations, and expanding sample sizes towards the inclusion of larger numbers of participants is an endeavor that requires an equally large amount of time, resources, and effort. That being said, smaller sample sizes of well-described and contextualized scenarios are still valuable and pose a contribution to the field.

Finally, the lack of long-term follow-up measurements hinder our ability to test the longevity of the effects of the different intervention protocols. Discriminating confounding and contextual effects with the passage of time in different workplaces makes it difficult to support the validity of long-term measurements. However, the development and inclusion of objective

measures of performance, and biobehavioral aspects of wellbeing can be a potential solution for this predicament.

Future Research and Final Remarks

As for suggestions towards future research, we believe there is great value in the design and implementation of intervention studies that incorporate different blocks of content and skills to be developed that allows for testing in a scaled fashion between different groups to dismantle the effects of different components (e.g. Lindsay et al., (2018). Approaches like this could shed light on the possible synergies between different components, clearly identifying the core aspects of MBIs and also looking for potentially unwanted effects.

As well, the inclusion of cost-effect evaluations is the logical next step to develop solid arguments that go beyond the psychological benefits of implementing MBIs at work. Including financial evidence in favor of MBI as occupational health interventions with a positive return on investment will make them more readily available both in the private and public sectors.

Finally, incorporating objective measures of performance and biobehavioral aspects of wellbeing can further legitimate the positive effects derived from MBIs at work, providing solid ground for the actual benefits going beyond experimental and laboratory settings. Along the same line, planning for long term follow-up measures in tandem with structural measures to improve adherence to practice and effect sustainability is a relevant area still to be explored as is the incorporation of a multilevel perspective to expand the conception of mindfulness beyond the individual perspective into teams and organizations.

Chapter 7

General Conclusions

The main goal of this thesis project was to expand the research on Mindfulness and MBIs at work and its effects on workers' levels of psychological wellbeing and performance by testing for these effects on several different work-specific MBI protocols ranging from standardized content and rationale to full-on multi-component customizations. This goal was established based upon existing gaps in the mindfulness literature and translated into specific questions and research challenges to be addressed throughout the different chapters.

To begin, we define the fundamental concepts of mindfulness and MBIs and explore its effects on different approaches to psychological wellbeing and performance in the existing literature. As well, we establish a series of practical recommendations on the design and implementation of MBIs explicitly customized for the work setting. Moving on, we proceeded to test different MBI protocols starting with work-specific adaptations of standardized protocols and moving towards increasingly customized MBI designs to increase fit to the specific organizations' and workers' reality and needs. These MBI protocols were tested in different profiles of working populations (i.e., healthcare workers, and white-collar workers), and evaluated using different study designs (i.e., controlled trials, diary studies, and differential effects studies), and a variety of methodological approaches (i.e., repeated measures ANOVAs, and Linear Growth Modeling, Qualitative content evaluation).

The main features of each study alongside their results and central contributions to the corresponding research challenges are presented in the section below. Next, we discuss the practical implications, limitations, and future studies, to close with a final remark note.

Addressing the Research Challenges

Research Challenge 1: *Can MBIs foster worker's psychological wellbeing?*

In order to address this challenge, we began in Chapter 2 with a brief conceptualization of mindfulness and MBIs at work alongside an integrative conceptual framework of psychological wellbeing that contemplates both hedonic and eudaimonic aspects of experience (Deci & Ryan, 2008). We continued with a focused review of the existing reported effects of MBIs developed in different working populations on a variety of measures of psychological wellbeing. Only six intervention studies of MBIs at work reported some type of psychological wellbeing measure used for the evaluation of the program, and the majority of the reported measures erred on the side of the hedonic perspective of wellbeing. This suggested a lack of evidence on the effects of MBIs on integrative measures of wellbeing, and more specifically, on the eudaimonic aspect of experience. And overall, clearly established the scarcity of MBI intervention studies focusing on the promotion of psychological wellbeing at work.

Following these findings, we proposed different MBI evaluation designs on a variety of measures of psychological wellbeing throughout Chapters 3, 4, 5, and 6. In Chapter 3, a brief MBI based on MBCT (Segal et al., 2001) was offered to a sample of healthcare professionals (Total n=34, Intervention Group n=19, Control group n=15) using a controlled trial design. After participating in the three-session length MBI program, the participants in the intervention group reported significantly higher levels of Happiness and Work Engagement when compared to participants in the control group. Overall, these results give a first glimpse into the positive

effects of MBI at work, suggesting they're effective strategies at promoting general as well as work-specific levels of psychological wellbeing.

Next, in Chapter 4, we performed a replication study of the same MBI protocol evaluated in Chapter 3. Only this time, we changed the evaluation method towards a diary design to capture the daily changes on trajectories of growth of two different components of psychological wellbeing (i.e., positive emotions and absorption). In this iteration of the program, a total of forty healthcare workers participated and were allocated either to the intervention (n=20) or a waiting-list control group (n=20). Results indicated the participants in the intervention group showed higher levels of daily positive emotions during the intervention program when compared to participants in the intervention groups. Still, there were no significant differences regarding the daily levels of absorption. These results suggest that brief MBIs have an almost immediate effect on hedonic aspects of psychological wellbeing, facilitating the perception of positive events and feelings that trigger positive emotions, as well as sustaining this growth through time (Davidson & Schuyler, 2015).

In Chapter 5, we took a step further and proposed a multi-component MBI that combined the foundations and basic principles of mindfulness training alongside specific skills and tools from the Positive Psychology framework (i.e., character strengths, meaning-focused coping, and psychological capital). The aim of the chapter was to test the effects of a multi-component and work-specific MBI on participants' daily levels of different elements of psychological wellbeing (i.e., daily levels of energy, affective tone, satisfaction with life). A sample of thirty-nine white-collar workers from a services organization participated in the intervention program through four consecutive weeks. Results suggest that the intervention program was successful in increasing employee daily levels of emotional tone and satisfaction with life through the practice of positive

psychological resources. This indicates that work-specific multi-component MBIs can be effective at promoting daily levels of workers' psychological wellbeing.

Finally, in Chapter 6, we conducted a differential effects study comparing two different MBI programs between themselves and with a control group. The first MBI program was based on MBCT (Segal et al., 2001) and consisted of six consecutive sessions of two hours each. The second program was customized work-specific MBI composed of three sessions of four hours each. The aim of this study was to explore the differential effects of the two intervention programs on different facets of participant's mindfulness, dimensions of psychological wellbeing, work engagement, performance, and stress. A total of twenty-eight white-collar workers from two different organizations completed one of the various programs, and their results were compared between groups and against twenty-seven participants randomly allocated to a waiting list control group. Results suggest that both mindfulness intervention programs were successful at increasing participants' levels of psychological wellbeing and work engagement, as well as decreasing their levels of stress when compared with the control group. When comparing both intervention groups, the brief work-specific MBI program showed better results at increasing specific dimensions of psychological wellbeing (i.e., autonomy, and environmental mastery), and work engagement (i.e., vigor), while the MBCT based program was better a decreasing participant's levels of stress.

Taken together, the results presented throughout the different chapters provide a consistent account of MBIs increasing workers' levels of psychological wellbeing. A total number of 106 workers took part in some form of MBI and experienced increases in their levels of psychological wellbeing. In general, these studies contribute to the mindfulness and MBI

literature by providing empirical evidence of the effects of both general and work-specific MBIs as effective strategies to foster psychological wellbeing at work.

Research Challenge 2: *Can MBIs help workers increase their performance?*

In response to the second challenge with recapitulate the results for each one of the intervention studies but this time focusing on the effects on different measures of performance.

In chapter 3, participants who completed the brief MBI program reported significantly higher levels of self-rated performance when compared to participants in the intervention group. In this particular study, we utilized the measure of performance developed by Goodman & Svyantek (1999) that combines elements of task and contextual performance in a single construct. In this sense, the results suggest that participants perceive an increase both in their capacity to achieve specific job-related goals as well as to invest effort and energy in task to go beyond their responsibilities, such as helping other teammates.

On chapter 5, we incorporated in the diary study design a measure reflecting the daily levels of achievement of work-related goals. This measure reflects the construct of task engagement, which is defined by its focus on successfully managing and achieving job-related goals specific to each worker's role (Goodman & Svyantek, 1999). In this particular case, the results indicated that participants' time invested in practicing specific resources such as mindfulness, in combination with character strengths, had a positive effect on their daily levels of goal achievement. These results provide a more detailed account of how mindfulness practice can positively impact individuals' capacity to attain goals on a daily basis. Moreover, these results challenge the traditional perception that mindfulness is associated with a certain sense of

aimlessness and focusing on being instead of doing (Shonin, Van Gordon, Dunn, et al., 2014). When informed by values and focused on meaningful activities that promote personal and professional growth, mindfulness can practice can positively sustain the motivation towards attaining goals.

Finally, in Chapter 6, we compared the effects of the two MBI protocols described earlier on two dimensions of performance. Specifically, the results pointed out that MBCT (Segal et al., 2001) based intervention was more successful at increasing participants' levels of task or in-role performance, while the work-specific brief MBI was more successful at increasing participants levels of contextual or extra-role performance. Overall, both interventions were successful at increasing the participants' levels of performance when compared to the waiting-list control group. As well, the results suggest that lengthier MBIs have an increased effect on in-role performance, probably due to the effects of practice being sustained long enough to see changes in objective measures of achievement. On the other hand, the work-specific MBI emphasizes the use of character strengths and the cultivation of each individuals' best qualities, which in turn motivate individuals to act in a more selfless way and engage in activities that go beyond formal responsibilities and involve helping others (Berry et al., 2018).

In summary, we present empirical evidence on three different studies of the positive impact mindfulness, and MBIs can have on workers' levels of performance. A total of N=106 workers took part in some form of MBI and experienced increases in their levels of performance. These studies taken together contribute to the mindfulness literature by specifying the effect mindfulness practice haves on levels of global and daily levels and specific dimensions of performance in samples of workers from different sectors.

Research Challenge 3: *Are work-specific MBIs effective at promoting worker's wellbeing and performance?*

For the remaining third challenge, we recapitulate the intervention studies briefly in two blocks corresponding to the different features the different MBIs tested incorporate. To begin, the MBI program utilized in Chapter 3 and 4 provides a detailed account of how a brief version of a standardized program can be successful at promoting workers' levels of psychological wellbeing and performance. Indicating that adjusting content depth and practice length to the time constraints of the working context is not detrimental to the positive effects at least from a short-term perspective. The studies presented in Chapters 5 and 6 adhere to the brief format but incorporate different content and rationale to the MBI programs. More specifically, both programs include content in the form of skills and tools from Positive Psychology (i.e., character strengths, meaning-focused coping, and psychological capital) using a work-specific framework that emphasizes connecting with work-related tasks and the working environment with a different perspective. Mindfulness creates a synergy with these skills by making them more profound, infusing them with intention, and directing them toward meaningful goals related to personal and professional growth. Notably, in Chapter 6, the work-specific MBI performed even better than the MBCT based brief program suggesting that the synergy of mindfulness and positive psychology can be extremely fruitful in their shared objective of fostering psychological wellbeing and optimal functioning.

Overall, the brief MBI intervention format showed consistently positive results across different samples. When incorporating the work-specific rationale and merging with Positive Psychology content, it maintained and even surpassed the positive effects of the standardized content version on measures of both performance and psychological wellbeing. These findings

contribute to the mindfulness and MBI literature by expanding the effectivity of MBIs towards work-specific and multi-component programs creating bridges with Positive Psychology tools and skills.

Linking the results presented in the answers to each one of the specific research challenges indicates that MBIs are an effective positive intervention strategy to increase workers' levels of psychological wellbeing and performance. As well, work-specific MBIs focusing on briefer programs an incorporating content from skills and tools from Positive Psychology present promising results in the same direction. Even though we have presented these elements in a separate manner, we believe they are closely related. Throughout this thesis, we presented different arguments that taken together present a solid account of the underlying mechanisms explaining the changes that occurred during the interventions. To begin, the two main underlying mechanisms are attention and emotion regulation (Lindsay & Creswell, 2016; Tang et al., 2015). The conscious effort invested in paying attention to different aspects of experience enhances participants attentional capacity, this primary element coupled with the specific attitude of experiential acceptance and curiosity fosters emotional regulation (Lindsay & Creswell, 2019). More specifically, participants learn to monitor, describe and embrace inner emotional states instead of avoiding and repressing inner experiences, which in turn allows them to enact behaviors that come from a space of reflection and self-awareness instead of automatism and instinct. These two elements have a clear effect on levels of psychological wellbeing, helping individuals reduce the time spent mind wandering and the "stickiness" of intense emotional episodes, recovering faster from negative emotional experiences, and helping them sustain and deepen episodes of positive emotions (Davidson & Schuyler, 2015). As well, improvements in attentional and emotional regulation capacities can explain increased perceptions of individual

performance. Workers who can sustain their attentional focus more efficiently on any given task are likely to make fewer mistakes and invest less energy and cognitive resources to achieve their desired goals (Chiesa et al., 2011). As well, a better emotional regulation capacity can help workers successfully navigate the social dynamics present in almost every type of job, including potential conflicts with teammates, supervisors, and customers (Glomb et al., 2011).

Finally, a third important element to be acknowledged as a relevant underlying mechanism is empathy and compassion. Mindfulness facilitates the recognition of emotional states within oneself and in others, which in turn can facilitate empathic resonance (Preckel et al., 2018). Compassion can be understood as a motivation that orientates to: '. . . a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it' (P. Gilbert, 2019), which in turn predisposes individuals toward prosocial behaviors (Donald et al., 2019). Empathy and compassion can enhance psychological wellbeing by fostering the basic human need of belongingness and social connection (Chang et al., 2015), as well as increasing performance through voluntary work behaviors that positively impact others (Spector & Fox, 2002).

In summary, the results presented in this thesis project contribute to the theoretical framework of mindfulness by providing empirical evidence supporting the positive effect of MBIs on workers' levels of psychological wellbeing and performance through the specific pathways highlighted above.

Practical Implications

This thesis project presents a few implications to help practitioners orient their work in the field of MBIs at work. First, MBIs are an effective strategy to promote mental health and psychological wellbeing going beyond the simple perspective of diminishing negative aspects of experience. In the challenge for growing and sustaining workers, health MBIs prove to be successful from an integrative perspective that includes psychological wellbeing and optimal functioning in the concept of health. Thus, when implementing intervention strategies to address mental health and wellbeing at work, MBIs are a well-suited candidate.

Second, work-specific MBIs can be of great help as a complementary strategy to increase performance at the individual level alongside other more traditional measures such as providing feedback, learning and development opportunities, and coaching. Mindfulness training changes the individuals' attitude towards experience, fostering openness to experience and curiosity, which are two key ingredients when it comes to professional and personal growth, leading to increased performance.

Third, MBI programs do not have to be resource and time-intensive. Quite the contrary, they show promise as cost-effective intervention strategies for promoting mental health and wellbeing (Kuyken et al., 2015). And likely the same could be said in the future regarding work-specific MBIs. A brief initial training program can be easily be followed up with complementary training opportunities including self-directed exercises using different types of technological platforms (i.e., smartphone apps, webinars, guided audio practices), mindfulness practice groups and corporate initiatives that require relatively marginal costs such as providing an open practice space or incorporating brief mindfulness practices to protocolary activities such as meetings.

Limitations and Future Research

The studies presented in this thesis project are not without limitations that should be considered to grasp the results better. First, all of the presented studies rely solely on self-report measures. This might be problematic when it comes to measures of performance, which ideally should be evaluated by supervisors or teammates, or objective ratios of performance specific to each type of job and organization. Despite this limitation, on every study, we conducted common method bias analyses to support the distinctiveness of the measures utilized (Podsakoff et al., 2012), and obtained results supporting the absence of bias.

Second, the sample sizes in all of the studies were relatively small. This issue presents a major difficulty in the generalization of the results to a wide range of working populations. However, we presented accounts of positive effects for at least two different types of workers (i.e., healthcare and white-collar). And, obtained medium to large effect sizes consistently across the different MBI programs put to the test.

Third, strict randomization of the participants into different conditions was not possible due to the shift-based nature of work in the Hospitals in studies 3 and 4. As well, the control groups in studies presented in chapters 3, 4, and 6 did not partake in a similar equivalent activity to the MBI program lacking in the specific components that are supposed to make MBIs work. Overall, this diminishes the quality of the studies, but the presence of a positive effect on every single MBI intervention proves their effectivity from a broader perspective.

Fourth, our results are limited to short the short term, and we lack follow-up measures to inquire about the long-term effects of MBIs at work and their effects on psychological wellbeing

and performance. This can be addressed by including medium and long-term follow up evaluations that focus on the sustainability of the intervention effects.

Future studies in the field of MBIs at work should focus on the development of a multi-level framework of implementation and evaluation, focusing not only on the individual level but also including a collective and organizational perspective into MBIs that supports the incorporation of mindfulness-based practices across all levels of the organizations. Also, it is necessary to provide a detailed account of the underlying psychological mechanisms at play and how they affect each desirable outcome at work "as they happen." This can be achieved dedicated diary studies looking at patterns of change in attentional and emotional regulation capacities linked to specific measures of wellbeing and performance. As well, the development of higher standard controlled trials that include active control groups and detailed process and context evaluation besides the traditional outcomes evaluation is needed. Additionally, future studies focusing on MBIs at work should incorporate cost-effectiveness evaluations and objective measures of performance and productivity to have an integral account of the effects of MBIs on every aspect of organizational life. At the same time, it is necessary to incorporate medium and long term follow up measures that can provide clear answers to the longevity of intervention effects, and shed light on specific mechanisms to sustain the desired intervention outcomes in time. Finally, the different approaches to future studies described here should be founded on pre-existing theoretical frameworks from Occupational Heath Psychology and Positive Organizational Psychology to strengthen the adoption of MBIs from these perspectives.

Final Note

This thesis project contributes to the mindfulness and MBI literature by providing empirical evidence on the positive effects of MBIs at work on participants' levels of psychological wellbeing and performance. As well, we believe our results can be relevant for practitioners and organizations that contemplate their workers' health and wellbeing as a strategic priority and seek means to manage it and promote it. Organizations that take good care of their workers have the key to a thriving future, and MBIs are a fundamental ingredient in the recipe for health, wellbeing, and success in the face of an ever-changing world and unsuspected challenges still to come.

As a concluding remark, it is worth to mention that while MBIs at work can have a positive impact on workers' wellbeing and performance, and thus seem like a desirable thing to pursue, it is extremely important to promote mindfulness training for the right reasons. This means that MBIs are not supposed to be presented as strategies to promote employee compliance and shifting their work orientation towards a performance seeking culture of self-exploitation. Quite the opposite, mindfulness in its essence it's about shifting our inner orientation to experience towards the present moment with acceptance and certain attitude of non-striving, and the positive outcomes highlighted in this thesis project should come about as a byproduct of that experiential change. Accordingly, MBI training at work should strive to be aligned with ethical guidelines such as those promoted by Buddhist traditions that seek to offer a secular approach to moral precepts that frame and provide a sense of direction to the practice.

References

Aikens, K. A., Astin, J., Pelletier, K. R., Levanovich, K., Baase, C. M., Park, Y. Y., & Bodnar, C. M. (2014). Mindfulness Goes to Work: Impact of an Online Workplace Intervention. *Journal of Occupational and Environmental Medicine*, *56*(7). https://doi.org/10.1097/JOM.0000000000000209

Alexandrova-Karamanova, A., Todorova, I., Montgomery, A., Panagopoulou, E., Costa, P., Baban, A., Davas, A., Milosevic, M., & Mijakoski, D. (2016). Burnout and health behaviors in health professionals from seven European countries. *International Archives of Occupational and Environmental Health*, *89*(7), 1059–1075. https://doi.org/10.1007/s00420-016-1143-5

Allen, T. D., & Kiburz, K. M. (2012). Trait mindfulness and work–family balance among working parents: The mediating effects of vitality and sleep quality. *Journal of Vocational Behavior*, *80*(2), 372–379. https://doi.org/10.1016/j.jvb.2011.09.002

AMRA. (2020). *Mindfulness journal articles published by year*. https://goamra.org/resources/

Arias, A. J., Steinberg, K., Banga, A., & Trestman, R. L. (2006). Systematic review of the efficacy of meditation techniques as treatments for medical illness. *Journal of Alternative and Complementary Medicine (New York, N.Y.)*, *12*(8), 817–832. https://doi.org/10.1089/acm.2006.12.817

Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, *22*(2), 127–152. https://doi.org/10.1002/hrdq.20070

Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *The Leadership Quarterly*, *16*(3), 315–338. https://doi.org/10.1016/j.leaqua.2005.03.001

Baer, R. a, Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*(1), 27–45. https://doi.org/10.1177/1073191105283504

Baer, R. a, Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., Walsh, E., Duggan, D., & Williams, J. M. G. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and nonmeditating samples. *Assessment*, *15*(3), 329–342. https://doi.org/10.1177/1073191107313003

Barnard, L. K., & Curry, J. F. (2011). Self-Compassion: Conceptualizations, Correlates, & Interventions. *Review of General Psychology*, *15*(4), 289–303. https://doi.org/10.1037/a0025754

Bartlett, L., Martin, A., Neil, A. L., Memish, K., Otahal, P., Kilpatrick, M., & Sanderson, K. (2019). A systematic review and meta-analysis of workplace mindfulness training randomized controlled trials. *Journal of Occupational Health Psychology*, *24*(1), 108–126. https://doi.org/10.1037/ocp0000146

Bennett, A. A., Bakker, A. B., & Field, J. G. (2018). Recovery from work-related effort: A meta-

analysis. *Journal of Organizational Behavior*, *39*(3), 262–275. https://doi.org/10.1002/job.2217

Benson, H., Beary, J. F., & Carol, M. P. (1974). The Relaxation Response. In *Psychiatry (New York)* (Vol. 37, Issue 3). Harper Collins. https://doi.org/10.1521/00332747.1974.11023815

Berry, D. R., Brown, K. W., Cairo, A. H., Goodman, R. J., Quaglia, J. T., Green, J. D., Berry, D. R., Brown, K. W., Cairo, A. H., Goodman, R. J., & Jordan, T. (2018). *Mindfulness Increases Empathic and Prosocial Responses Toward Ostracized Strangers*. *147*(1), 93–112.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D., & Devins, G. (2004). Mindfulness: A Proposed Operational Definition. *Clinical Psychology: Science and Practice*, *11*(3), 230–241. https://doi.org/10.1093/clipsy.bph077

Black, D. S. (2010). Mindfulness Research Guide: A New Paradigm for Managing Empirical Health Information. *Mindfulness*, *1*(3), 174–176. https://doi.org/10.1007/s12671-010-0019-0

Bliese, P. D., & Ployhart, R. E. (2002). Growth Modeling Using Random Coefficient Models: Model Building, Testing, and Illustrations. *Organizational Research Methods*, *5*(4), 362–387. https://doi.org/10.1177/109442802237116

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: capturing life as it is lived. *Annual Review of Psychology*. https://doi.org/10.1146/annurev.psych.54.101601.145030

Bolger, N., & Laureceau, J.-P. (2013). *Intensive Longitudinal Methods*. Guilford Press.

Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: A meta-analysis of randomized controlled studies. *BMC Public Health*, *13*(1). https://doi.org/10.1186/1471-2458-13-119

Botke, J. A., Jansen, P. G. W., Khapova, S. N., & Tims, M. (2018). Work factors influencing the transfer stages of soft skills training: A literature review. *Educational Research Review*, *24*(April), 130–147. https://doi.org/10.1016/j.edurev.2018.04.001

Bridger, R. S., & Brasher, K. (2011). Cognitive task demands, self-control demands and the mental well-being of office workers. *Ergonomics*, *54*(9), 830–839. https://doi.org/10.1080/00140139.2011.596948

Brown, K. W., & Cordon, S. (2009). Toward a phenomenology of mindfulness: Subjective experience and emotional correlates. In *Clinical handbook of mindfulness.* (pp. 59–81). Springer Science + Business Media. https://doi.org/10.1007/978-0-387-09593-6_5

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822–848. https://doi.org/10.1037/0022-3514.84.4.822

Campos, D., Cebolla, A., Quero, S., Bretón-López, J., Botella, C., Soler, J., García-Campayo, J., Demarzo, M., & Baños, R. M. (2015). Meditation and happiness: Mindfulness and self-compassion may mediate the meditation-happiness relationship. *Personality and Individual*

Differences, *SEPTEMBER*. https://doi.org/10.1016/j.paid.2015.08.040

Carlson, L. E., & Brown, K. W. (2005). Validation of the Mindful Attention Awareness Scale in a cancer population. *Journal of Psychosomatic Research*, *58*(1), 29–33. https://doi.org/10.1016/j.jpsychores.2004.04.366

Carmody, J., & Baer, R. A. (2008). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. *Journal of Behavioral Medicine*, *31*(1), 23–33. https://doi.org/10.1007/s10865-007-9130-7

Carmody, J., Baer, R. A., L B Lykins, E., & Olendzki, N. (2009). An empirical study of the mechanisms of mindfulness in a mindfulness-based stress reduction program. *Journal of Clinical Psychology*, *65*(6), 613–626. https://doi.org/10.1002/jclp.20579

Cebolla, a., García-Palacios, a., Soler, J., Guillen, V., Baños, R., & Botella, C. (2012). Psychometric properties of the Spanish validation of the Five Facets of Mindfulness Questionnaire (FFMQ). *The European Journal of Psychiatry*, *26*(2), 118–126. https://doi.org/10.4321/S0213-61632012000200005

Cebolla, A., Enrique, A., Alvear, D., Soler, J., & Garcia-Campayo, J. (2017). Psicología Positiva Contemplativa: Integrando mindfulness en la Psicología Positiva. *Papeles Del Psicólogo*, *38*(1), 12–18.

Chang, J.-H., Huang, C.-L., & Lin, Y.-C. (2015). Mindfulness, Basic Psychological Needs Fulfillment, and Well-Being. *Journal of Happiness Studies*, *16*(5), 1149–1162. https://doi.org/10.1007/s10902-014-9551-2

Chen, C., Elliot, A. J., & Sheldon, K. M. (2019). Psychological need support as a predictor of intrinsic and external motivation: the mediational role of achievement goals. *Educational Psychology*, *39*(8), 1090–1113. https://doi.org/10.1080/01443410.2019.1618442

Cheung, F., & Lucas, R. E. (2014). Assessing the validity of single-item life satisfaction measures: results from three large samples. *Quality of Life Research*, *23*(10), 2809–2818. https://doi.org/10.1007/s11136-014-0726-4

Chiesa, A., Calati, R., & Serretti, A. (2011). Does mindfulness training improve cognitive abilities? A systematic review of neuropsychological findings. *Clinical Psychology Review*, *31*(3), 449–464. https://doi.org/10.1016/j.cpr.2010.11.003

Chin, B., Slutsky, J., Raye, J., & Creswell, J. D. (2019). Mindfulness Training Reduces Stress at Work: a Randomized Controlled Trial. *Mindfulness*, *10*(4), 627–638. https://doi.org/10.1007/s12671-018-1022-0

Choi, E., Farb, N., Pogrebtsova, E., Gruman, J., & Grossman, I. (2020). *Current challenges in mindfulness research: Troubles with capturing Sammā Sati*.

Cohen, J. (1992). A power primer. In *Psychological Bulletin* (Vol. 112, Issue 1, pp. 155–159). American Psychological Association. https://doi.org/10.1037/0033-2909.112.1.155

Cohen, S., Karmack, T., & Mermelstein, R. (2014). A Global Measure of Perceived Stress. *Journal of Health and Social Behavior*, *24*(4), 385–396.

Coo, C., & Salanova, M. (2018). Mindfulness Can Make You Happy-and-Productive: A Mindfulness Controlled Trial and Its Effects on Happiness, Work Engagement and Performance. *Journal of Happiness Studies*, *19*(6), 1691–1711. https://doi.org/10.1007/s10902-017-9892-8

Coo Calcagni, C., & Salanova Soria, M. (2016). Validación española de la escala abreviada Five Facet Mindfulness Questionnaire (FFMQ): Un estudio piloto. *Àgora De Salut*, *3*, 103–110. https://doi.org/10.6035/AgoraSalut.2016.3.11

Crane, R. S., Brewer, J., Feldman, C., Kabat-Zinn, J., Santorelli, S., Williams, J. M. G., & Kuyken, W. (2017). What defines mindfulness-based programs? the warp and the weft. In *Psychological Medicine* (Vol. 47, Issue 6). https://doi.org/10.1017/S0033291716003317

Crane, Rebecca S., & Kuyken, W. (2019). The Mindfulness-Based Interventions: Teaching Assessment Criteria (MBI:TAC): reflections on implementation and development. *Current Opinion in Psychology*, *28*, 6–10. https://doi.org/10.1016/j.copsyc.2018.10.004

Creswell, J. D. (2017). Mindfulness Interventions. *Annual Review of Psychology2*, *September*, 1–26. https://doi.org/10.1146/annurev-psych-042716-051139

Cropanzano, R., & Wright, T. (2001). A Review and Further Refinement of the Happy-Productive Worker Thesis. *Consulting Psychology Journal*, *53*(3), 182–199. https://doi.org/10.1037//106W087.53.3.182

Dahl, C. J., & Davidson, R. J. (2019). Mindfulness and the contemplative life: pathways to connection, insight, and purpose. *Current Opinion in Psychology*, *28*, 60–64. https://doi.org/10.1016/j.copsyc.2018.11.007

Dahl, C. J., Lutz, A., & Davidson, R. J. (2015). Reconstructing and deconstructing the self: Cognitive mechanisms in meditation practice. *Trends in Cognitive Sciences*, *19*(9), 515–523. https://doi.org/10.1016/j.tics.2015.07.001

Dane, E., & Brummel, B. J. (2013). Examining workplace mindfulness and its relations to job performance and turnover intention. *Human Relations*, *67*(1), 105–128. https://doi.org/10.1177/0018726713487753

Davidson, R. J., & Schuyler, B. S. (2015). Neuroscience of Happiness. In J. Helliwell, R. Layard, & J. Sachs (Eds.), *World Happiness Report* (World Happ, Vol. 15). Sustainable Development Solutions Newtosk.

Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies*, *9*(1), 1–11. https://doi.org/10.1007/s10902-006-9018-1

Delohery, C. (2017). *Stumped on How to Bring Mindfulness to Your Business? Learn from Top Brands*. Karma CRM. https://www.karmacrm.com/blog/stumped-on-how-to-bring-mindfulness-to-your-business-learn-from-top-brands/

Díaz, D., Rodríguez-Carvajal, R., Blanco, A., Moreno-Jiménez, B., Gallardo, I., Valle, C., & Van Dierendonck, D. (2006). Adaptación española de las escalas de bienestar psicológico de Ryff. *Psicothema*, *18*(3), 572–577.

Diener, E., Heintzelman, S., Kushlev, K., Tay, L., Wirtz, D., Lutes, L., & Oishi, S. (2016).

Findings all psychologists should know from the new science on subjective well-being. *Canadian Psychology*, *Oct*, No Pagination Specified. https://doi.org/http://dx.doi.org/10.1037/cap0000063

Dimeff, L., & Linehan, M. M. (2001). Dialectical Behavior Therapy in a Nutshell. *The California Psychologist*, *January 2001*, 1–3.

Donald, J. N., Sahdra, B. K., Van Zanden, B., Duineveld, J. J., Atkins, P. W. B., Marshall, S. L., & Ciarrochi, J. (2019). Does your mindfulness benefit others? A systematic review and meta-analysis of the link between mindfulness and prosocial behaviour. *British Journal of Psychology*, *110*(1), 101–125. https://doi.org/10.1111/bjop.12338

Donaldson, Scott I., Lee, J. Y., & Donaldson, S. I. (2019). Evaluating Positive Psychology Interventions at Work: a Systematic Review and Meta-Analysis. *International Journal of Applied Positive Psychology*. https://doi.org/10.1007/s41042-019-00021-8

Donaldson, Stewart I., & Ko, I. (2010). Positive organizational psychology, behavior, and scholarship: A review of the emerging literature and evidence base. *Journal of Positive Psychology*, *5*(3), 177–191. https://doi.org/10.1080/17439761003790930

Donaldson, Stewart I, Dollwet, M., & Rao, M. A. (2015). Happiness, excellence, and optimal human functioning revisited: Examining the peer-reviewed literature linked to positive psychology. *The Journal of Positive Psychology*, *10*(3), 185–195. https://doi.org/10.1080/17439760.2014.943801

Eberth, J., & Sedlmeier, P. (2012). The Effects of Mindfulness Meditation: A Meta-Analysis. *Mindfulness*, *3*(3), 174–189. https://doi.org/10.1007/s12671-012-0101-x

Eby, L. T., Allen, T. D., Conley, K. M., Williamson, R. L., Henderson, T. G., & Mancini, V. S. (2016a). Mindfulness-based training interventions for employees: A qualitative review of the literature. *Human Resource Management Review*. https://doi.org/10.1016/j.hrmr.2017.03.004

Eby, L. T., Allen, T. D., Conley, K. M., Williamson, R. L., Henderson, T. G., & Mancini, V. S. (2016b). Mindfulness-based training interventions for employees: A qualitative review of the literature. *Human Resource Management Review*. https://doi.org/10.1016/j.hrmr.2017.03.004

EU-OSHA. (2014). *Calculating the cost of work-related stress and psychosocial risks*. https://osha.europa.eu/en/publications/literature_reviews/calculating-the-cost-of-work-related-stress-and-psychosocial-risks/view

Eurofound. (2017). *Sixth European Working Conditions Survey – Overview report (2017 update)*. https://www.eurofound.europa.eu/publications/report/2016/working-conditions/sixth-european-working-conditions-survey-overview-report

Eurofund. (2013). *Impact of the crisis on working conditions in Europe*. https://www.eurofound.europa.eu/sites/default/files/ef_files/docs/ewco/tn1212025s/tn1212025s.pdf

Eurofund. (2018). *Working conditions and workers' health*. https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef18

041en1.pdf

Eurofund & ILO. (2019). *Working conditions in a global perspective*. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_696174.pdf

European Union. (2016). *European Framework for Action on Mental Health and Well-being*. http://www.mentalhealthandwellbeing.eu/publications

EUROSTAT. (2017). *Which sector is the main employer in the EU Member States*. https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20171024-1

Fernández-Castro, J., Martínez-Zaragoza, F., Rovira, T., Edo, S., Solanes-Puchol, Á., Martín-del-Río, B., García-Sierra, R., Benavides-Gil, G., & Doval, E. (2017). How does emotional exhaustion influence work stress? Relationships between stressor appraisals, hedonic tone, and fatigue in nurses' daily tasks: A longitudinal cohort study. *International Journal of Nursing Studies*, *75*(July), 43–50. https://doi.org/10.1016/j.ijnurstu.2017.07.002

Fila, M. J., Purl, J., & Griffeth, R. W. (2017). Job demands, control and support: Meta-analyzing moderator effects of gender, nationality, and occupation. *Human Resource Management Review*, *27*(1), 39–60. https://doi.org/https://doi.org/10.1016/j.hrmr.2016.09.004

Fisher, C. (2019). Emotions in Organizations. In *Oxford Research Encyclopedia of Business and Management* (Issue March). https://doi.org/10.1093/acrefore/9780190224851.013.160

Franquesa, A., Cebolla, A., García-Campayo, J., Demarzo, M., Elices, M., Pascual, J. C., & Soler, J. (2017). Meditation Practice Is Associated with a Values-Oriented Life: the Mediating Role of Decentering and Mindfulness. *Mindfulness*, *8*(5). https://doi.org/10.1007/s12671-017-0702-5

Fredrickson, B. L., & Joiner, T. (2002). Positive Emotions Trigger Upward Spirals Toward Emotional Well-Being. *Psychological Science*, *13*(2), 172–175. https://doi.org/10.1111/1467-9280.00431

Fredrickson, Barbara L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*(3), 218–226. https://doi.org/10.1037/0003-066X.56.3.218

Fredrickson, Barbara L. (2000). *Why Positive Emotions Matter in Organizations: Lessons From the Broaden-and-Build Model12 Barbara L. Fredrickson3*. *4*(2).

Fredrickson, Barbara L, Cohn, M. a, Coffey, K. a, Pek, J., & Finkel, S. M. (2008). Open hearts build lives: positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, *95*(5), 1045–1062. https://doi.org/10.1037/a0013262

Frijda, N. H. (1993). Moods, emotion episodes, and emotions. In *Handbook of emotions.* (pp. 381–403). Guilford Press.

Garland, E. L., Farb, N. A., Goldin, P. R., & Fredrickson, B. L. (2015a). Mindfulness Broadens Awareness and Builds Eudaimonic Meaning: A Process Model of Mindful Positive Emotion Regulation. *Psychological Inquiry*, *26*(4), 293–314.

https://doi.org/10.1080/1047840X.2015.1064294

Garland, E. L., Farb, N. A., Goldin, P. R., & Fredrickson, B. L. (2015b). The Mindfulness-to-Meaning Theory: Extensions, Applications, and Challenges at the Attention–Appraisal–Emotion Interface. *Psychological Inquiry*, *26*(4). https://doi.org/10.1080/1047840X.2015.1092493

Garland, E. L., Farb, N. A., R. Goldin, P., & Fredrickson, B. L. (2015). Mindfulness Broadens Awareness and Builds Eudaimonic Meaning: A Process Model of Mindful Positive Emotion Regulation. *Psychological Inquiry*, *26*(4). https://doi.org/10.1080/1047840X.2015.1064294

Garland, E. L., Geschwind, N., Peeters, F., & Wichers, M. (2015). Mindfulness training promotes upward spirals of positive affect and cognition: Multilevel and autoregressive latent trajectory modeling analyses. *Frontiers in Psychology*, *6*(FEB), 1–13. https://doi.org/10.3389/fpsyg.2015.00015

Garland, E. L., Kiken, L. G., Faurot, K., Palsson, O., & Gaylord, S. A. (2016). Upward Spirals of Mindfulness and Reappraisal: Testing the Mindfulness-to-Meaning Theory with Autoregressive Latent Trajectory Modeling. *Cognitive Therapy and Research*, *October*, 1–12. https://doi.org/10.1007/s10608-016-9768-y

Geschwind, N., Peeters, F., Drukker, M., van Os, J., & Wichers, M. (2011). Mindfulness training increases momentary positive emotions and reward experience in adults vulnerable to depression: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *79*(5), 618–628. https://doi.org/10.1037/a0024595

Gilbert, E., Foulk, T., & Bono, J. (2018). Building personal resources through interventions: An integrative review. *Journal of Organizational Behavior*, *39*(2), 214–228. https://doi.org/10.1002/job.2198

Gilbert, P. (2019). Explorations into the nature and function of compassion. *Current Opinion in Psychology*, *28*, 108–114. https://doi.org/10.1016/j.copsyc.2018.12.002

Gleichgerrcht, E., & Decety, J. (2014). The relationship between different facets of empathy, pain perception and compassion fatigue among physicians . In *Frontiers in Behavioral Neuroscience* (Vol. 8, p. 243). https://www.frontiersin.org/article/10.3389/fnbeh.2014.00243

Glomb, T., Duffy, M., Joyce, B., & Tao, Y. (2011). Mindfulness at Work. In A. Joshi, H. Liao, & J. J. Martocchio (Eds.), *Research in Personnel and Human Resources Management* (Vol. 30, pp. 115–157). Emerald Group Publishing Limited. https://doi.org/10.1108/S0742-7301(2011)0000030005

Goleman, D. (2013). *Focus: The hidden driver of excellence*. Harper Collins.

González-Romá, V., & Hernández, A. (2017). Multilevel Modeling: Research-Based Lessons for Substantive Researchers. *Annual Review of Organizational Psychology and Organizational Behavior*, *4*(1), 183–210. https://doi.org/10.1146/annurev-orgpsych-041015-062407

Good, D. J., Lyddy, C. J., Glomb, T. M., Bono, J. E., Brown, K. W., Duffy, M. K., Baer, R. a, Brewer, J. a, & Lazar, S. W. (2016). Contemplating Mindfulness at Work: An Integrative

Review. *Journal of Management*, *42*(1), 114–142. https://doi.org/10.1177/0149206315617003

Goodman, S. A., & Svyantek, D. J. (1999). Person-Organization Fit and Contextual Performance: Do Shared Values Matter. *Journal of Vocational Behavior*, *55*(2), 254–275. https://doi.org/10.1006/jvbe.1998.1682

Green, L. S., & Grant, A. M. (2006). Cognitive–behavioral, solution–focused life coaching: Enhancing goal striving, well–being, and hope. *Journal of Positive Psychology*, *1*(3), 142–149. https://doi.org/10.1080/17439760600619849

Greene, W. H. (2002). *Econometric Analysis*. Pearson Education.

Guendelman, S., Medeiros, S., & Rampes, H. (2017). Mindfulness and emotion regulation: Insights from neurobiological, psychological, and clinical studies. *Frontiers in Psychology*, *8*(MAR). https://doi.org/10.3389/fpsyg.2017.00220

Hafenbrack, A. C., Kinias, Z., & Barsade, S. G. (2014). Debiasing the mind through meditation: mindfulness and the sunk-cost bias. *Psychol Sci*, *25*(2). https://doi.org/10.1177/0956797613503853

Hanley, A., Warner, A., & Garland, E. L. (2014). Associations Between Mindfulness, Psychological Well-Being, and Subjective Well-Being with Respect to Contemplative Practice. *Journal of Happiness Studies*, *16*(6), 1423–1436. https://doi.org/10.1007/s10902-014-9569-5

Harrington, A., & Dunne, J. D. (2015). When mindfulness is therapy. *American Psychologist*, *70*(7), 621–631. https://doi.org/10.1037/a0039460

Harris, C., Daniels, K., & Briner, R. B. (2003). A daily diary study of goals and affective well-being at work. *Journal of Occupational and Organizational Psychology*, *76*(3), 401–410. https://doi.org/10.1348/096317903769647256

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, *44*(1), 1–25. https://doi.org/10.1016/j.brat.2005.06.006

Heckenberg, R. A., Eddy, P., Kent, S., & Wright, B. J. (2018). Do workplace-based mindfulness meditation programs improve physiological indices of stress? A systematic review and meta-analysis. *Journal of Psychosomatic Research*, *114*(September), 62–71. https://doi.org/10.1016/j.jpsychores.2018.09.010

Herman, P. M., Anderson, M. L., Sherman, K. J., Balderson, B. H., Turner, J. A., & Cherkin, D. C. (2017). Cost-effectiveness of Mindfulness-based Stress Reduction Versus Cognitive Behavioral Therapy or Usual Care among Adults with Chronic Low Back Pain. *Spine*, *42*(20), 1511–1520. https://doi.org/10.1097/BRS.0000000000002344

Hersey, R. (1932). *Workers' emotions in shop and home: A study of individual workers from the psychological and physiological standpoint*. University of Pennsylvania Press.

Hervás, G., & Vázquez, C. (2013). Construction and validation of a measure of integrative well-being in seven languages: the Pemberton Happiness Index. *Health and Quality of Life*

Outcomes, *11*, 66. https://doi.org/10.1186/1477-7525-11-66

Hilton, L., Hempel, S., Ewing, B. A., Apaydin, E., Xenakis, L., Newberry, S., Colaiaco, B., Maher, A. R., Shanman, R. M., Sorbero, M. E., & Maglione, M. A. (2017). Mindfulness Meditation for Chronic Pain: Systematic Review and Meta-analysis. *Annals of Behavioral Medicine : A Publication of the Society of Behavioral Medicine*, *51*(2), 199–213. https://doi.org/10.1007/s12160-016-9844-2

Hindman, R. K., Glass, C. R., Arnkoff, D. B., & Maron, D. D. (2015). A Comparison of Formal and Informal Mindfulness Programs for Stress Reduction in University Students. *Mindfulness*, *6*(4), 873–884. https://doi.org/10.1007/s12671-014-0331-1

Hockey, J. R. (1997). Compensatory control in the regulation of human performance under stress and high workload: A cognitive-energetical framework. *Biological Psychology*, *45*(1–3), 73–93. https://doi.org/10.1016/S0301-0511(96)05223-4

Hollis-Walker, L., & Colosimo, K. (2011). Mindfulness, self-compassion, and happiness in non-meditators: A theoretical and empirical examination. *Personality and Individual Differences*, *50*(2), 222–227. https://doi.org/10.1016/j.paid.2010.09.033

Holzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How Does Mindfulness Meditation Work? Proposing Mechanisms of Action From a Conceptual and Neural Perspective. *Perspectives on Psychological Science*, *6*, 537–559. https://doi.org/10.1177/1745691611419671

Howells, A., Ivtzan, I., & Eiroa-Orosa, F. J. (2014). Putting the 'app'in Happiness: A Randomised Controlled Trial of a Smartphone-Based Mindfulness Intervention to Enhance Wellbeing. *Journal of Happiness Studies*, 1–23. https://doi.org/10.1007/s10902-014-9589-1

Hülsheger, U. R., Alberts, H. J. E. M., Feinholdt, A., & Lang, J. W. B. (2013). Benefits of mindfulness at work: the role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. *The Journal of Applied Psychology*, *98*(2), 310–325. https://doi.org/10.1037/a0031313

Hülsheger, U. R., Lang, J. W. B., Depenbrock, F., Fehrmann, C., Zijlstra, F. R. H., & Alberts, H. J. E. M. (2014). *The Power of Presence : The Role of Mindfulness at Work for Daily Levels and Change Trajectories of Psychological Detachment and Sleep Quality*. *99*(6), 1113–1128.

Huppert, F. A., & So, T. T. C. (2013). Flourishing Across Europe: Application of a New Conceptual Framework for Defining Well-Being. *Social Indicators Research*, *110*(3), 837–861. https://doi.org/10.1007/s11205-011-9966-7

Ivandic, I., Freeman, A., Birner, U., Nowak, D., & Sabariego, C. (2017). A systematic review of brief mental health and well-being interventions in organizational settings. *Scandinavian Journal of Work, Environment and Health*, *43*(2), 99–108. https://doi.org/10.5271/sjweh.3616

Ivtzan, I., Young, T., Martman, J., Jeffrey, A., Lomas, T., Hart, R., & Eiroa-orosa, F. J. (2016). Integrating Mindfulness into Positive Psychology : a Randomised Controlled Trial of an Online Positive Mindfulness Program. *Mindfulness, 2015*. https://doi.org/10.1007/s12671-

016-0581-1

Janssen, M., Heerkens, Y., Kuijer, W., van der Heijden, B., & Engels, J. (2018). Effects of Mindfulness-Based Stress Reduction on employees' mental health: A systematic review. *PLOS ONE*, *13*(1), 1–37. https://doi.org/10.1371/journal.pone.0191332

Kabat-Zinn, J. (2013). *Full catastrophe living : using the wisdom of your body and mind to face stress, pain, and illness*. Revised and updated edition. New York : Bantam Books, 2013. https://search.library.wisc.edu/catalog/9910217515502121

Kabat-Zinn, J. (2017). Too Early to Tell: The Potential Impact and Challenges—Ethical and Otherwise—Inherent in the Mainstreaming of Dharma in an Increasingly Dystopian World. *Mindfulness*, 1125–1135. https://doi.org/10.1007/s12671-017-0758-2

Kahn, W. (1990). Psychological Conditions of Personal Engagement and Disengagement at Work. *Academy of Management Journal*, *33*(4), 692–724. https://doi.org/10.1021/la051212i

Kahn, W. A. (1992). To Be Fully There: Psychological Presence at Work. *Human Relations*, *45*(4), 321–349. https://doi.org/10.1177/001872679204500402

Kersemaekers, W., Rupprecht, S., Wittmann, M., & Tamdjidi, C. (2018). *A Workplace Mindfulness Intervention May Be Associated With Improved Psychological Well-Being and Productivity . A Preliminary Field Study in a Company Setting*. *9*(February), 1–11. https://doi.org/10.3389/fpsyg.2018.00195

Kersemaekers, W., Rupprecht, S., Wittmann, M., Tamdjidi, C., Falke, P., Donders, R., Speckens, A., & Kohls, N. (2018). A workplace mindfulness intervention may be associated with improved psychological well-being and productivity. A preliminary field study in a company setting. *Frontiers in Psychology*, *9*(FEB), 1–11. https://doi.org/10.3389/fpsyg.2018.00195

Keyes, C. L. M., Dhingra, S. S., & Simoes, E. J. (2010). Change in level of positive mental health as a predictor of future risk of mental Illness. *American Journal of Public Health*, *100*(12), 2366–2371. https://doi.org/10.2105/AJPH.2010.192245

Khoury, B., Sharma, M., Rush, S. E., & Fournier, C. (2015a). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research*, *78*(6), 519–528. https://doi.org/10.1016/j.jpsychores.2015.03.009

Khoury, B., Sharma, M., Rush, S. E., & Fournier, C. (2015b). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research*, 3–12. https://doi.org/10.1016/j.jpsychores.2015.03.009

Killingsworth, M. A., & Gilbert, D. T. (2010). A Wandering Mind Is an Unhappy Mind. *Science*, *330*(6006), 932 LP – 932. https://doi.org/10.1126/science.1192439

Kornfield, J. (2011). *Teachings of the Buddha*. Shambala Publications.

Kornhauser, A., & Sharp, A. (1932). Employee attitudes: Suggestions from a study in a factory. *Personnel Journal*, *10*, 393–404.

Kreplin, U., Farias, M., & Brazil, I. A. (2018). The limited prosocial effects of meditation: A

systematic review and meta-analysis. *Scientific Reports*, *8*(1). https://doi.org/10.1038/s41598-018-20299-z

Kuyken, W., Hayes, R., Barrett, B., Byng, R., Dalgleish, T., Kessler, D., Lewis, G., Watkins, E., Morant, N., Taylor, R. S., & Byford, S. (2015). The effectiveness and cost-effectiveness of mindfulness-based cognitive therapy compared with maintenance antidepressant treatment in the prevention of depressive relapse/recurrence: Results of a randomised controlled trial (The PREVENT study). *Health Technology Assessment*, *19*(73), 1–123. https://doi.org/10.3310/hta19730

Kuyken, W., Watkins, E., Holden, E., White, K., Taylor, R. S., Byford, S., Evans, A., Radford, S., Teasdale, J. D., & Dalgleish, T. (2010). How does mindfulness-based cognitive therapy work? *Behaviour Research and Therapy*, *48*(11), 1105–1112. https://doi.org/10.1016/j.brat.2010.08.003

Lama, D., & Cutler, H. (1998). *The Art of Happiness*. Riverhead Books.

Langer, E. J., Blank, A., & Chanowitz, B. (1978). The mindlessness of ostensibly thoughtful action: The role of "placebic" information in interpersonal interaction. *Journal of Personality and Social Psychology*, *36*(6), 635–642. https://doi.org/10.1037/0022-3514.36.6.635

Langer, E. J., & Moldoveanu, M. (2000). Mindfulness Research and the Future. *Journal of Social Issues*, *56*(1), 129–139. https://doi.org/10.1111/0022-4537.00155

Lao, S. A., Kissane, D., & Meadows, G. (2016). Cognitive effects of MBSR/MBCT: A systematic review of neuropsychological outcomes. In *Consciousness and Cognition* (Vol. 45). https://doi.org/10.1016/j.concog.2016.08.017

Lawrie, E. J., Tuckey, M. R., & Dollard, M. F. (2018). Job design for mindful work: The boosting effect of psychosocial safety climate. *Journal of Occupational Health Psychology*, *23*(4), 483–495. https://doi.org/10.1037/ocp0000102

Le Blanc, P. M., & Oerlemans, W. G. M. (2016). Amplition in the Workplace: Building a Sustainable Workforce through Individual Positive Psychological Interventions. *Papeles Del Psicólogo*, *37*(3), 185–191.

Leka, S., & Jain, A. (2017). *Mental Health in the Workplace in Europe*. https://ec.europa.eu/health/sites/health/files/mental_health/docs/2017_workplace_en.pdf

Leroy, H., Anseel, F., Dimitrova, N. G., & Sels, L. (2013). Mindfulness, authentic functioning, and work engagement: A growth modeling approach. *Journal of Vocational Behavior*, *82*(3), 238–247. https://doi.org/10.1016/j.jvb.2013.01.012

Levey, J., & Levey, M. (2018). Roots and Shoots of Mindfulness. *Subtle Energies Magazine*, *28*(3). https://osf.io/m38rg

Levin, M. (2017). *Why Google, Nike, and Apple Love Mindfulness Training, and How You Can Easily Love It Too*. Inc. https://www.inc.com/marissa-levin/why-google-nike-and-apple-love-mindfulness-training-and-how-you-can-easily-love-.html

Lindsay, E. K., Chin, B., Greco, C. M., Young, S., Brown, K. W., Wright, A. G. C., Smyth, J.

M., Burkett, D., & Creswell, J. D. (2018). How mindfulness training promotes positive emotions: Dismantling acceptance skills training in two randomized controlled trials. *Journal of Personality and Social Psychology*, *115*(6), 944–973. https://doi.org/10.1037/pspa0000134

Lindsay, E. K., & Creswell, J. D. (2015). Back to the Basics: How Attention Monitoring and Acceptance Stimulate Positive Growth. *Psychological Inquiry*, *26*(4). https://doi.org/10.1080/1047840X.2015.1085265

Lindsay, E. K., & Creswell, J. D. (2016). Mechanisms of mindfulness training: Monitor and Acceptance Theory (MAT). *Clinical Psychology Review*, *51*, 48–59. https://doi.org/10.1016/j.cpr.2016.10.011

Lindsay, E. K., & Creswell, J. D. (2019). Mindfulness, acceptance, and emotion regulation: perspectives from Monitor and Acceptance Theory (MAT). *Current Opinion in Psychology*, *28*, 120–125. https://doi.org/10.1016/j.copsyc.2018.12.004

Lindsay, E. K., Young, S., Smyth, J. M., Brown, K. W., & Creswell, J. D. (2018). Acceptance lowers stress reactivity: Dismantling mindfulness training in a randomized controlled trial. *Psychoneuroendocrinology*, *87*(January), 63–73. https://doi.org/10.1016/j.psyneuen.2017.09.015

Llorens, S., Salanova, M., & Rodríguez, A. M. (2013). How is flow experienced and by whom? Testing flow among occupations. *Stress and Health*, *29*(2), 125–137. https://doi.org/10.1002/smi.2436

Locke, E. A., & Latham, G. P. (2013). *New Developments in Goal Setting and Task Performance* (E. A. Locke & G. P. Latham (eds.)). Routledge. https://doi.org/10.4324/9780203082744

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., Hart, R., & Eiroa-Orosa, F. J. (2017). The impact of mindfulness on well-being and performance in the workplace: an inclusive systematic review of the empirical literature. *European Journal of Work and Organizational Psychology*, *26*(4), 492–513. https://doi.org/10.1080/1359432X.2017.1308924

Luthans, F., & Youssef-Morgan, C. M. (2017). Psychological Capital: An Evidence-Based Positive Approach. *Annual Review OfOrganizational Psychology and Organizational Behavior*, *4*, 339–366. https://doi.org/10.1146/annurev-orgpsych-032516-113324

Luthans, F., Youssef, C., & Avolio, B. (2007). *Psychological Capital : Developing the Human Competitive Edge*. Oxford University Press. https://doi.org/10.1093/ISBN

Lutz, A., Dunne, J. D., & Davidson, R. J. (2007). Meditation and the Neuroscience of Consciousness. In P. Zelazo, M. Moscovitch, & E. Thomson (Eds.), *Cambridge Handbook of Consciousness* (pp. 1–120). Cambridge University Press.

Lyubomirsky, S., & Layous, K. (2013). How Do Simple Positive Activities Increase Well-Being? *Current Directions in Psychological Science*, *22*(1), 57–62. https://doi.org/10.1177/0963721412469809

Lyubomirsky, Sonja, King, L., & Diener, E. (2005). The benefits of frequent positive affect: does happiness lead to success? *Psychological Bulletin*, *131*(6), 803–855. https://doi.org/10.1037/0033-2909.131.6.803

Lyubomirsky, Sonja, Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, *9*(2), 111–131. https://doi.org/10.1037/1089-2680.9.2.111

Malinowski, P., & Lim, H. J. (2015). Mindfulness at Work: Positive Affect, Hope, and Optimism Mediate the Relationship Between Dispositional Mindfulness, Work Engagement, and Well-Being. *Mindfulness*, *6*(6). https://doi.org/10.1007/s12671-015-0388-5

Matthews, G., & Desmond, P. A. (2002). Task-induced fatigue states and simulated driving performance. *The Quarterly Journal of Experimental Psychology A: Human Experimental Psychology*, *55A*(2), 659–686. https://doi.org/10.1080/02724980143000505

Mellor, N. J., Ingram, L., Van Huizen, M., Arnold, J., & Harding, A.-H. (2016). Mindfulness training and employee well-being. *International Journal of Workplace Health Management*, *9*(2), 126–145. https://doi.org/10.1108/IJWHM-11-2014-0049

Meneghel, I., Salanova, M., & Martínez, I. M. (2016). Feeling Good Makes Us Stronger: How Team Resilience Mediates the Effect of Positive Emotions on Team Performance. *Journal of Happiness Studies*, *17*(1), 239–255. https://doi.org/10.1007/s10902-014-9592-6

Mesmer-Magnus, J., Manapragada, A., Viswesvaran, C., & Allen, J. W. (2017). Trait mindfulness at work: A meta-analysis of the personal and professional correlates of trait mindfulness. *Human Performance*, *30*(2–3), 79–98. https://doi.org/10.1080/08959285.2017.1307842

Miglianico, M., Dubreuil, P., Miquelon, P., Bakker, A. B., & Martin-Krumm, C. (2019). Strength Use in the Workplace: A Literature Review. *Journal of Happiness Studies*, *21*(2), 737–764. https://doi.org/10.1007/s10902-019-00095-w

Montes-Maroto, G., Rodríguez-Muñoz, A., Antino, M., & Gil, F. (2018). *Mindfulness Beyond the Individual : Spillover and Crossover Effects in Working Couples*. 1258–1267.

Neff, K. D. (2003). Self-Compassion: An Alternative Conceptualization of a Healthy Attitude Toward Oneself. *Self and Identity*, *2*(2), 85–101. https://doi.org/10.1080/15298860309032

Ngnoumen, C. T., & Langer, E. J. (2016). Mindfulness: The essence of well-being and happiness. In *Mindfulness in positive psychology: The science of meditation and wellbeing.* (pp. 97–107). Routledge/Taylor & Francis Group.

Nhat Hanh, T. (2006). *True Love: A Practice for Awakening the Heart*. Shambhala Publications Inc.

Nielsen, K., & Miraglia, M. (2016). What works for whom in which circumstances? On the need to move beyond the 'what works?' question in organizational intervention research. *Human Relations*, *70*(1), 40–62. https://doi.org/10.1177/0018726716670226

Niemiec, R. M. (2012). Mindful living: Character strengths interventions as pathways for the five mindfulness trainings. *International Journal of Wellbeing*, *2*, 22–33. https://doi.org/10.5502/ijw.v2i1.2

Niemiec, R. M., Rashid, T., & Spinella, M. (2012). Strong mindfulness: Integrating mindfulness and character strengths. *Journal of Mental Health Counseling*, *34*(3), 240–253.

http://search.proquest.com.proxycu.wrlc.org/pqrl/docview/1027919928/EC87284312444D4PQ/14?accountid=9940

O'Shea, D., O' Connell, B. H., & Gallagher, S. (2016). Randomised Controlled Trials in WOHP Interventions: A Review and Guidelines for Use. *Applied Psychology*, *65*(2), 190–222. https://doi.org/10.1111/apps.12053

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary Studies in Organizational Research: An Introduction and Some Practical Recommendations. In *Journal of Personnel Psychology*. https://doi.org/10.1027/1866-5888/a000009

Ortega Maldonado, A., & Salanova, M. (2018). *Its Time to Act!: Empirical Findings on how to Enhance Psychological Well-being and Performance through Positive Interventions.* [Universitat Jaume I]. https://doi.org/https://www.tdx.cat/handle/10803/587112

Parola, V., Coelho, A., Cardoso, D., Sandgren, A., & Apóstolo, J. (2017). Prevalence of burnout in health professionals working in palliative care: a systematic review. *JBI Evidence Synthesis*, *15*(7). https://journals.lww.com/jbisrir/Fulltext/2017/07000/Prevalence_of_burnout_in_health_professionals.15.aspx

Peiró, J. M., Kozusznik, M., Molina, I. R., & Tordera, N. (2019). The happy-productive worker model and beyond: Patterns of wellbeing and performance atwork. *International Journal of Environmental Research and Public Health*, *16*(3). https://doi.org/10.3390/ijerph16030479

Peláez, M. J., Coo, C., & Salanova, M. (2019). Facilitating Work Engagement and Performance Through Strengths-Based Micro-coaching: A Controlled Trial Study. *Journal of Happiness Studies*, *0123456789*. https://doi.org/10.1007/s10902-019-00127-5

Peñalver, J., Salanova, M., Martínez, I. M., & Schaufeli, W. B. (2017). Happy-productive groups: How positive affect links to performance through social resources. *Journal of Positive Psychology*, *9760*(November), 1–16. https://doi.org/10.1080/17439760.2017.1402076

Peterson, C., & Seligman, M. (2004). *Character Strengths and Virtues: A Handbook and Classification*. American Psychological Association and Oxford University Press. https://doi.org/10.1176/appi.ajp.162.4.820-a

Pisljar, T., van der Lippe, T., & den Dulk, L. (2011). Health among hospital employees in Europe: A cross-national study of the impact of work stress and work control. *Social Science & Medicine*, *72*(6), 899–906. https://doi.org/https://doi.org/10.1016/j.socscimed.2010.12.017

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of Method Bias in Social Science Research and Recommendations on How to Control It. *Annual Review of Psychology*, *63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Pogrebtsova, E., Craig, J., Chris, A., O'Shea, D., & González-Morales, M. G. (2017). Exploring daily affective changes in university students with a mindful positive reappraisal intervention: A daily diary randomized controlled trial. *Stress and Health*, *April 2016*, 1–13. https://doi.org/10.1002/smi.2759

Preckel, K., Kanske, P., & Singer, T. (2018). On the interaction of social affect and cognition: empathy, compassion and theory of mind. *Current Opinion in Behavioral Sciences*, *19*, 1–6. https://doi.org/10.1016/j.cobeha.2017.07.010

Quinlan, D., Swain, N., & Vella-Brodrick, D. A. (2012). Character Strengths Interventions: Building on What We Know for Improved Outcomes. *Journal of Happiness Studies*, *13*(6), 1145–1163. https://doi.org/10.1007/s10902-011-9311-5

Rahula, W. (1959). *What the Buddha taught*. Grove Press.

Raudenbush, S. W., & Bryk, A. S. (2001). *Hierarchical Linear Models: Applications and Data Analysis Methods* (Sage Publi).

Reb, J., Narayanan, J., & Chaturvedi, S. (2014). Leading Mindfully: Two Studies on the Influence of Supervisor Trait Mindfulness on Employee Well-Being and Performance. *Mindfulness*, *5*(1), 36–45. https://doi.org/10.1007/s12671-012-0144-z

Reb, J., Narayanan, J., & Ho, Z. W. (2013). Mindfulness at Work: Antecedents and Consequences of Employee Awareness and Absent-mindedness. *Mindfulness*, *6*(1), 111–122. https://doi.org/10.1007/s12671-013-0236-4

Ricard, M. (2003). *Happiness: A Guide to Develop Life's Most Important Skill*. Little, Brown and Company.

Ricard, M. (2010). *Why Meditate?* Hay House.

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, *53*(3), 617–635. https://doi.org/10.5465/amj.2010.51468988

Rodríguez-Sánchez, A. M., Schaufeli, W., Salanova, M., Cifre, E., & Sonnenschein, M. (2011). Enjoyment and absorption: An electronic diary study on daily flow patterns. *Work & Stress*, *25*(1), 75–92. https://doi.org/10.1080/02678373.2011.565619

Roll, L. C., Van Zyl, L. E., & Griep, Y. (2019). Brief Positive Psychological Interventions Within Multi-cultural Organizational Contexts: A Systematic Literature Review. In L. E. Van Zyl & S. Rothmann (Eds.), *Theoretical Approaches to Multi-Cultural Positive Psychological Interventions* (pp. 523–544). , Cham. https://doi.org/https://doi.org/10.1007/978-3-030-20583-6_24

Rosenkranz, M. A., Dunne, J. D., & Davidson, R. J. (2019). The next generation of mindfulness-based intervention research: what have we learned and where are we headed? *Current Opinion in Psychology*, *28*, 179–183. https://doi.org/10.1016/j.copsyc.2018.12.022

Rupprecht, S., Koole, W., Chaskalson, M., Tamdjidi, C., & West, M. (2019). Running too far ahead? Towards a broader understanding of mindfulness in organisations. *Current Opinion in Psychology*, *28*, 32–36. https://doi.org/10.1016/j.copsyc.2018.10.007

Ryan, R. M., & Deci, E. L. (2001a). *O N H APPINESS AND H UMAN P OTENTIALS : A Review of Research on Hedonic and Eudaimonic Well-Being*.

Ryan, R. M., & Deci, E. L. (2001b). On Happiness and Human Potentials: A Review of Research

on Hedonic and Eudaimonic Well-Being. *Annual Review of Psychology*, *52*, 141–166.

Ryan, R. M., & Deci, E. L. (2001c). On Happiness and Human Potentials: A review of Research on Hedonic and Eudaimonic Wellbeing. *Annual Review of Psychology*, *51*, 141–166. https://doi.org/10.1210/en.2015-1958

Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies*, *9*(1), 13–39. https://doi.org/10.1007/s10902-006-9019-0

Saad, L. (2017). *Eight in Ten Americans Afflicted by Stress*. Gallup News. https://news.gallup.com/poll/224336/eight-americans-afflicted-stress.aspx

Saks, A. M., & Gruman, J. A. (2015). Mindfulness and the Transfer of Training. *Industrial and Organizational Psychology*, *8*(4), 689–694. https://doi.org/10.2307/1556339

Salanova, M., Bakker, A. B., & Llorens, S. (2006). Flow at Work: Evidence for an Upward Spiral of Personal and Organizational Resources*. *Journal of Happiness Studies*, *7*(1), 1–22. https://doi.org/10.1007/s10902-005-8854-8

Salanova, M., & Llorens, S. (2016). Hacia Una Psicología Positiva Aplicada. *Papeles Del Psicólogo*, *37*(3), 161–164.

Salanova, M., Llorens, S., Acosta, H., & Torrente, P. (2013a). Positive interventions in organizations Positive Interventions in Positive Organizations. *Terapia Psicologica*, *31*(1), 101–113. https://doi.org/10.4067/S0718-48082013000100010

Salanova, M., Llorens, S., Acosta, H., & Torrente, P. (2013b). Positive interventions in organizations Positive Interventions in Positive Organizations. *Terapia Psicológica*, *31*(31), 101–113.

Salanova, M., Llorens, S., Cifre, E., & Martínez, I. M. (2012). We Need a Hero! Toward a Validation of the Healthy and Resilient Organization (HERO) Model. *Group & Organization Management*, *37*(6), 785–822. https://doi.org/10.1177/1059601112470405

Salanova, M., Llorens, S., & Schaufeli, W. B. (2011). *"Yes, I Can, I Feel God, and I Just Do It!" On Gain Cycles and Spirals of Efficacy Beliefs, Affect and Engagement* (pp. 255–285). Applied Psychology.

Salanova, M., & Ortega-Maldonado, A. (2019). Psychological Capital Development in Organizations: An Integrative Review of Evidence-Based Intervention Programs. In L. E. Van Zyl & S. Rothmann Sr. (Eds.), *Positive Psychological Intervention Design and Protocols for Multi-Cultural Contexts* (pp. 81–102). Springer International Publishing. https://doi.org/10.1007/978-3-030-20020-6_4

Sansó, N., Galiana, L., González, B., Sarmentero, J., Reynes, M., Oliver, A., & Garcia-Toro, M. (2019). Differential Effects of Two Contemplative Practice-based Programs for Health Care Professionals. *Psychosocial Intervention*, *28*(3), 131–138. https://doi.org/https://doi.org/10.5093/pi2019a12

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological*

Measurement, *66*(4), 701–716. https://doi.org/10.1177/0013164405282471

Schaufeli, W. B., Salanova, M., González-romá, V., & Bakker, A. B. (2002). The Measurement of Engagement and Burnout: A Two Sample Confirmatory Factor Analytic Approach. *Journal of Happiness Studies*, *3*(1), 71–92. https://doi.org/10.1023/A:1015630930326

Schaufeli, W., & Bakker, A. (2003). UWES Manual. In *Occupational Health Psychology Unit, Utrecth University* (Issue November).

Schaufeli, W., & Salanova, M. (2011). Work engagement: On how to better catch a slippery concept. *European Journal of Work and Organizational Psychology*, *20*(1), 39–46. https://doi.org/10.1080/1359432X.2010.515981

Schoormans, D., & Nyklicek, I. (2011). Mindfulness and psychologic well-being: are they related to type of meditation technique practiced? *Journal of Alternative and Complementary Medicine (New York, N.Y.)*, *17*(7), 629–634. https://doi.org/10.1089/acm.2010.0332

Scott, B. A., Colquitt, J. A., Paddock, E. L., & Judge, T. A. (2010). A daily investigation of the role of manager empathy on employee well-being. *Organizational Behavior and Human Decision Processes*, *113*(2), 127–140. https://doi.org/10.1016/j.obhdp.2010.08.001

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2001). *Mindfulness-Based Cognitive Therapy for Depression* (1st ed.). Guilford Press.

Seligman, M. E. P., & Csikszentmihalyi, M. (2014). Positive Psychology: An Introduction. In *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi* (pp. 279–298). Springer Netherlands. https://doi.org/10.1007/978-94-017-9088-8_18

Seligman, M. E. P., Steen, T. a, Park, N., & Peterson, C. (2005). Positive psychology progress: empirical validation of interventions. *The American Psychologist*, *60*(5), 410–421. https://doi.org/10.1037/0003-066X.60.5.410

Shao, R., & Skarlicki, D. P. (2009). The role of Mindfulness in predicting individual performance. *Canadian Journal of Behavioural Science*, *41*(4), 195–201. https://doi.org/10.1037/a0015166

Shapiro, S., & Izett, C. (2008). Meditation: A universal tool for cultivating empathy. In S. Hick & T. Bien (Eds.), *Mindfulness and the therapeutic relationship* (pp. 161–175). Guilford Press.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). *Mechanisms of Mindfulness* ○□. https://doi.org/10.1002/jclp

Sheldon, K. M., Kasser, T., Smith, K., & Share, T. (2002). Personal goals and psychological growth: Testing an intervention to enhance goal attainment and personality integration. *Journal of Personality*, *70*(1). https://doi.org/10.1111/1467-6494.00176

Sheldon, K. M., & Lyubomirsky, S. (2006). How to increase and sustain positive emotion: The effects of expressing gratitude and visualizing best possible selves. *Journal of Positive Psychology*, *1*(2), 73–82. https://doi.org/10.1080/17439760500510676

Shonin, E., Van Gordon, W., Dunn, T. J., Singh, N. N., & Griffiths, M. D. (2014). Meditation Awareness Training (MAT) for Work-related Wellbeing and Job Performance: A Randomised Controlled Trial. *International Journal of Mental Health and Addiction*. https://doi.org/10.1007/s11469-014-9513-2

Shonin, E., Van Gordon, W., & Griffiths, M. D. (2014). Meditation awareness training (MAT) for improved psychological well-being: a qualitative examination of participant experiences. *Journal of Religion and Health*, *53*(3), 849–863. https://doi.org/10.1007/s10943-013-9679-0

Sin, N. L., & Lyubomirsky, S. (2009). *Enhancing Well-Being and Alleviating Depressive Symptoms With Positive Psychology Interventions : 65*(5). https://doi.org/10.1002/jclp

Soler, J., Cebolla, A., Feliu-Soler, A., Demarzo, M. M. P., Pascual, J. C., Ba??os, R., & Garc??a-Campayo, J. (2014). Relationship between meditative practice and self-reported mindfulness: The MINDSENS composite index. *PLoS ONE*, *9*(1). https://doi.org/10.1371/journal.pone.0086622

Sonnentag, S. (2015). Dynamics of Well-Being. *Annual Review of Organizational Psychology and Organizational Behavior*, *2*(1), 261–293. https://doi.org/10.1146/annurev-orgpsych-032414-111347

Sonnentag, S., Binnewies, C., & Mojza, E. J. (2008). "Did You Have A Nice Evening?" A Day-Level Study on Recovery Experiences, Sleep, and Affect. *Journal of Applied Psychology*, *93*(3), 674–684. https://doi.org/10.1037/0021-9010.93.3.674

Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior. Some parallels between counterproductive work behavior and organizational citizenship behavior. *Human Resource Management Review*, *12*(2), 269–292. https://doi.org/10.1016/S1053-4822(02)00049-9

Straume, L. V., & Vittersø, J. (2012). *Happiness, inspiration and the fully functioning person: Separating hedonic and eudaimonic well-being in the workplace*. *7*(5), 387–398.

Straume, L. V., & Vittersø, J. (2014). Well-Being at Work: Some Differences Between Life Satisfaction and Personal Growth as Predictors of Subjective Health and Sick-Leave. *Journal of Happiness Studies*, 1–20. https://doi.org/10.1007/s10902-014-9502-y

Tang, Y.-Y., Hölzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature Reviews Neuroscience*, *16*(4). https://doi.org/10.1038/nrn3916

Taris, T. W., Schaufeli, W. B., & Shimazu, A. (2010). The difference between work engagement and workaholism. In M. P. Leiter & A. B. Bakker (Eds.), *Work engagement: A handbook of essential theory and research.* (pp. 39–53). Psychology Press.

Taris, T. W., & Schreurs, P. J. G. (2009). Well-being and organizational performance: An organizational-level test of the happy-productive worker hypothesis. *Work & Stress*, *23*(2), 120–136. https://doi.org/10.1080/02678370903072555

The Mindfulness Initiative. (2015). *The Mindfulness Nation UK Report*. https://www.themindfulnessinitiative.org/our-objectives

Tims, M., Bakker, A. B., & Xanthopoulou, D. (2011). Do transformational leaders enhance their followers' daily work engagement? *Leadership Quarterly*, *22*(1), 121–131. https://doi.org/10.1016/j.leaqua.2010.12.011

Tran, U. S., Glück, T. M., & Nader, I. W. (2013). Investigating the Five Facet Mindfulness Questionnaire (FFMQ): Construction of a Short Form and Evidence of a Two-Factor Higher Order Structure of Mindfulness. *Journal of Clinical Psychology*, *69*(9), 951–965. https://doi.org/10.1002/jclp.21996

Trujillo, H. M., & González-Cabrera, J. M. (2007). Psychometric properties of the Spanish version of the Perceived Stress Scale (PSS). *Psicologia Conductual*, *15*(3), 457–477.

U.S Bureau of Labor Statistics. (2019). *Employment by major industry sector*. https://www.bls.gov/emp/tables/employment-by-major-industry-sector.htm

van Dierendonck, D., Díaz, D., Rodríguez-Carvajal, R., Blanco, A., & Moreno-Jiménez, B. (2007). Ryff's Six-factor Model of Psychological Well-being, A Spanish Exploration. *Social Indicators Research*, *87*(3), 473. https://doi.org/10.1007/s11205-007-9174-7

Van Zyl, L. E., Efendic, E., Rothmann, S., & Shankland, R. (2019). Best-Practice Guidelines for Positive Psychological Intervention Research Design. In L. E. Van Zyl & S. Rothmann Sr. (Eds.), *Positive Psychological Intervention Design and Protocols for Multi-Cultural Contexts* (pp. 1–32). Springer International Publishing. https://doi.org/10.1007/978-3-030-20020-6_1

Vancouver, J. B., & Austin, J. T. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, *120*(3), 338–375.

Wang, Y.-Y., Li, X.-H., Zheng, W., Xu, Z.-Y., Ng, C. H., Ungvari, G. S., Yuan, Z., & Xiang, Y.-T. (2018). Mindfulness-based interventions for major depressive disorder: A comprehensive meta-analysis of randomized controlled trials. *Journal of Affective Disorders*, *229*, 429–436. https://doi.org/https://doi.org/10.1016/j.jad.2017.12.093

Wanous, J. P., & Reichers, A. E. (1996). Estimating the reliability of a single-item measure. *Psychological Reports*, *78*(2), 631–634. https://doi.org/10.2466/pr0.1996.78.2.631

Waterman, A. S. (1993). Two Conceptions of happiness: Contrats of Personal Expressiveness (eudaimonia) and Hedonic Enjoyment.pdf. *Journal of Personality and Social Psychology*, *64*(4), 678–691.

Weinstein, N., Brown, K. W., & Ryan, R. M. (2009). A multi-method examination of the effects of mindfulness on stress attribution, coping, and emotional well-being. *Journal of Research in Personality*, *43*(3), 374–385. https://doi.org/10.1016/j.jrp.2008.12.008

White, C. A., Uttl, B., & Holder, M. D. (2019). Meta-analyses of positive psychology interventions: The effects are much smaller than previously reported. In *PLoS ONE* (Vol. 14, Issue 5). https://doi.org/10.1371/journal.pone.0216588

WHO. (2005). *Constitution of the World Health Organization*.

Wolever, R. Q., Bobinet, K. J., McCabe, K., Mackenzie, E. R., Fekete, E., Kusnick, C. a, & Baime, M. (2012). Effective and Viable Mind-Body Stress Reductin in the Workplace: A

Randomized Controlled Trial. *Journal of Occupational Health Psychology*, *17*(2), 246–258. https://doi.org/10.1037/a0027278

Wreford, L., & Haddock, P. (2019). *Mindfulness and Social Change*. Resilience. https://www.resilience.org/stories/2019-08-15/mindfulness-and-social-change/

Wright, T., & Cropanzano, R. (2007). The Happy/Productive Worker Thesis Revisited. *Research in Personnel and Human Resources Management*, *26*(August 2007), 269–307. https://doi.org/10.1016/S0742-7301(07)26006-2

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2012). A diary study on the happy worker: How job resources relate to positive emotions and personal resources. *European Journal of Work and Organizational Psychology*, *21*(4), 489–517. https://doi.org/10.1080/1359432X.2011.584386

Yu, L., & Zellmer-bruhn, M. (2018). Introducing Team Mindfulness and Considering its Safeguard Role against Conflictr Transformation and Social Undermining. *Academy of Management Journal*.

Zeidan, F., Johnson, S. K., Diamond, B. J., David, Z., & Goolkasian, P. (2010). Mindfulness meditation improves cognition: Evidence of brief mental training. *Consciousness and Cognition*, *19*(2), 597–605. https://doi.org/https://doi.org/10.1016/j.concog.2010.03.014

Zelenski, J. M., Murphy, S. A., & Jenkins, D. A. (2008). The happy-productive worker thesis revisited. *Journal of Happiness Studies*, *9*(4), 521–537. https://doi.org/10.1007/s10902-008-9087-4

Zhang, J., & Wu, C. (2014). The influence of dispositional mindfulness on safety behaviors: A dual process perspective. *Accident Analysis and Prevention*, *70*, 24–32. https://doi.org/10.1016/j.aap.2014.03.006

Zohar, D., Epstein, R., & Tzischinski, O. (2003). Effects of Energy Availability on Immediate and Delayed Emotional Reactions to Work Events. *Journal of Applied Psychology*, *88*(6), 1082–1093. https://doi.org/10.1037/0021-9010.88.6.1082

Summary

The main goal of this dissertation is to expand the research on Mindfulness and MBIs at work and its effects on workers' levels of psychological wellbeing and performance by testing for these effects on several different work-specific MBI protocols ranging from standardized content and rationale to full-on multi-component customizations.

Based on this main goal, three key research questions are asked, and grouped into three distinct research challenges that will serve as a general outline of the specific objectives of this project.

Research Challenge 1: *Can MBIs foster worker's psychological wellbeing?*

Research Challenge 2: *Can MBIs help workers increase their performance?*

Research Challenge 3: *Are work-specific MBIs effective at promoting worker's wellbeing and performance?*

We address the different research challenges through the different chapters. More specifically, we present an initial brief review and conceptualization of MBIs at work focusing on its positive effects (chapter 2), and four empirical studies (chapters 3, 4, 5, and 6) focusing on testing MBI interventions from different perspectives.

In summary, the results presented in this thesis project contribute to the theoretical framework of mindfulness by providing empirical evidence supporting the positive effect of MBIs on workers' levels of psychological wellbeing and performance.

Resumen

El objetivo principal de esta disertación doctoral es expandir la investigación sobre mindfulness e intervenciones basadas en mindfulness (IBMs) y sus efectos sobre los niveles de bienestar psicológico y desempeño de los/as trabajadores/as. Esto se lleva a cabo poniendo a prueba diferentes programas de intervenciones basadas en mindfulness que van desde un formato estandarizado hasta adaptaciones multicomponente específicas para el contexto laboral.

Basándonos en este objetivo principal proponemos tres preguntas de investigación agrupadas en tres desafíos que servirán como guía general de los objetivos específicos de este proyecto de tesis.

Desafío de Investigación 1: *¿Pueden las IBMs promover el bienestar psicológico de los/as trabajadores/as?*

Desafío de Investigación 2: *¿Pueden las IBMs ayudar a los/as trabajadores/as a mejorar su desempeño?*

Desafío de Investigación 3: *¿Son eficaces las IBMs adaptadas al contexto laboral como estrategias para promover el bienestar psicológico y el desempeño?*

Respondemos a los diferentes desafíos a lo largo de los capítulos que componen esta tesis. Específicamente, iniciamos presentando una revisión y conceptualización breve de las IBMs en el contexto del trabajo y sus efectos positivos (capítulo 2), y cuatro estudios empíricos focalizados en evaluar IBMs desde diferentes perspectivas (capítulos 3, 4, 5, y 6).

En resumen, lo resultados presentados en este Proyecto contribuyen al conocimiento sobre mindfulness presentando evidencia empírica a favor de los efectos positivos de las IBMs sobre los niveles de bienestar psicológico y desempeño de los/as trabajadores/as.

Acknowledgements

Agradecimientos

Agradezco la oportunidad de dar gracias, ya que es uno de los caminos hacia la sabiduría y la felicidad. Agradezco a mi padre y a mi madre, por su apoyo incondicional en la búsqueda del propio camino y la comprensión infinita ante las dudas siempre presentes ante cada decisión. A ambos especialmente, por ser un ejemplo de esfuerzo, humildad y bondad genuina. Gracias también por hacerme parte una familia, para cada una de mis hermanas, con sus diferencias y similitudes cada una es una maestra en su propio camino con la cual compartir esta vida. Agradezco profundamente a cada uno de mis ancestros, a quienes llevo conmigo en cada paso de este camino.

Gracias infinitas a Marisa y Susana, por acogerme y darme la oportunidad de crecer y aprender en el equipo que han construido con su visión, dedicación y talento. Gracias a todos y cada uno de los compañeros y compañeras de equipo con quienes he tenido la fortuna de compartir las experiencias y desafíos que trae este camino de aprendizaje. Gracias a la Universitat Jaume I por apoyar este proyecto y ser una plataforma de desarrollo y crecimiento siempre presente. Gracias a Castellón de la Plana y a España, segundo hogar durante estos años y que han ofrecido su maravillosa tierra y gente con una apertura y belleza impensadas para explorar las propias raíces y al mismo tiempo abrirse al mundo.

Gracias a mi compañera de camino, Josefina, por ser una fuente inagotable de energía y apoyo, y siempre un ejemplo de cómo dar amor y compartir la vida con tus seres queridos.

Finalmente, gracias a todas las oportunidades y caminos que se abren al terminar esta etapa de trabajo y crecimiento y que prometen un futuro esperanzador.