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To cite this article: Nualnong Wongtongkam, Branka Krivokapic-Skoko, Roderick Duncan & Mariagrazia Bellio (2017) The influence of a mindfulness-based intervention on job satisfaction and work-related stress and anxiety, International Journal of Mental Health Promotion, 19:3, 134-143, DOI: [10.1080/14623730.2017.1316760](https://doi.org/10.1080/14623730.2017.1316760)

To link to this article: <http://dx.doi.org/10.1080/14623730.2017.1316760>



Published online: 20 Apr 2017.



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# The influence of a mindfulness-based intervention on job satisfaction and work-related stress and anxiety

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## ABSTRACT

Workplace mindfulness is a recognised tool for enhancing health and well-being of university staff and may result in better task performance and satisfaction in the workplace. The study examined the beneficial effects of mindfulness meditation on job satisfaction, mindful awareness and anxiety levels in university personnel. Mixed methods with a quasi-experiment and in-depth interviews were used. Fifteen participants engaged in a mindfulness meditation approach and five volunteers were interviewed. The findings showed a significant increase in awareness, with staying focused ( $t(14) = -3.09$ ,  $p = .00$ ), noticing feelings of physical tension ( $t(14) = -4.00$ ,  $p = .00$ ), being aware of running automatically ( $t(14) = -3.55$ ,  $p = .00$ ) and not being preoccupied with the future or the past ( $t(14) = -2.69$ ,  $p = .01$ ), respectively. Mindfulness was also effective in reducing sleep disturbance. Qualitative results demonstrated the mindfulness approach contributed to calmness and relaxation, and increased ability to handle difficult matters in the workplace. Apart from helping participants to better manage emotions, the mindfulness intervention could promote better relationships towards family members and reduce blood pressure to normal levels. Therefore, mindfulness meditation should be promoted across academic settings to enhance job performance and satisfaction and reduce work-related stress.

## ARTICLE HISTORY

Received 3 November 2016  
Accepted 31 March 2017

## KEYWORDS

Mindfulness meditation;  
university; emotion; job  
satisfaction

## 1. Introduction

Work-related stress is a feature of the modern workplace around the globe. In universities, complex management structures, limited financial resources and high demands from students create stressful conditions for staff (Kang & Sidhu, 2015; Winefield, 2000). In Australia, a survey of 17 universities found that half the staff were at risk of developing psychological disorders (e.g. anxiety and depression), and high levels of psychological strain were most likely to be associated with low levels of job satisfactions and stress-related health symptoms (e.g. sleeping difficulties, headaches) (Winefield, Gillespie, Stough, Dua, & Hapuararchchi, 2002). The study pointed out that almost 85% of staff was satisfied with the Employee

Assistance Program provided by universities, but, surprisingly, over 50% of staff did not know whether this was available in their institutions (Winefield et al., 2002). Recently, a new intervention called 'mindfulness' has received increased attention as a means to reduce workplace tension and improve health and emotional well-being among workers in organisations (Dane, 2010; Glomb, Duffy, Bono, & Yang, 2011). Nevertheless, little research has been identified into whether mindfulness could assist staff to increase levels of task performance resulting in enhanced job satisfaction in the workplace, or if mindfulness could contribute to work outcomes by promoting physical well-being and performance-related behaviour.

The concept of mindfulness meditation has had its root from the Buddhism around the 5th millennium B.C.E. (Cousins, 1996) and referred to focusing attention on the present moment in an accepting and non-judgemental manner (Baer, Smith, & Allen, 2004; Brown & Ryan, 2003). Regulated attention enhances awareness of individual's emotion, cognition and physical experiences of noticing things from moment to moment while non-judgemental awareness improves coping skills through decreasing reactivity to environments (Kabat-Zinn, 1994). Two underlying mechanisms of mindfulness approach have led to improving physical and psychological well-being (Grossman, Niwmann, Schmidt, & Walach, 2004). The interest of applying mindfulness to clinical and non-clinical settings has been expanded rapidly in the past few decades. Recently, there is an increasing interest in applying mindfulness techniques in occupational contexts, both staffs suffering from stress and mental issues and general workers who might be developing mental health issues in the future (referred as a protective strategy). Research is needed into using mindfulness in the workplace to investigate how it is implicated in promoting task performance, physical health and psychological health. Until recently, few studies have addressed this issue but the results have been encouraging (Allen & Kiburz, 2012; Wolever et al., 2012). For instance, a study of workplace mindfulness in 98 staff in the American restaurant industry found a positive association between workplace mindfulness and job performance, and a significant negative association with staff turnover (Dane & Brummel, 2014). In Europe, Hülshager and colleagues carried out a survey in the Netherlands and parts of Belgium and found that mindfulness was negatively related to emotional exhaustion and positively linked to job satisfaction at both the within- and between-person levels (Hülshager, Alberts, Feinholdt, & Lang, 2013). When the self-training mindfulness approach was employed, workers in the intervention group were less likely to experience emotional exhaustion and more likely to be satisfied with their jobs compared with a control group (Hülshager et al., 2013).

Universities are higher education institutions with high levels of work-related stress related to the need to respond to students' demands, often with limited financial resources and shortage of academic and administrative staff (Lainas, 2010). Stress and burnout in university staff can be a serious problem, both for the individuals experiencing emotional and physical consequences and for organisations in relation to low job performance, high turnover rates and costs to society as a whole (Lainas, 2010; Navarro, Mas, & Jiménez, 2010). Work impairment from the stress at workplace could result in mental disorders, inclusively generalised anxiety disorders (GAD), depression and personality disorders (Lim, Sanderson, & Anderes, 2000). Individual developed anxiety disorders are more likely to decline job performance, and labour force participations (Waghorn, Chant, White, & Whiteford, 2005) which are costed in billion dollars for medical treatments and productivity loss (Dupont et al., 1996). Therefore, there is an increasing need for searching preventive strategies to mitigate work-related mental health issues, particular clinical and psychotherapeutic techniques assisting

staff who might be in need. Mindfulness has become a well-recognised approach to handle for this matter. Most empirical researches associated educational settings have conducted in the schools and targeted specially on educators. For instance, a randomised controlled trial of 53 school teachers, aged 22–60 years, demonstrated mindfulness-based intervention improved general well-being, teaching efficacy and burnout/time pressure (Jennings et al., 2013). Similarly, Roeser et al. (2013) carried out randomised trial of MT (Mindfulness Training) both in Canada and the US on 113 elementary and secondary school teachers showed that intervention educators were significantly less occupational stress and burnout compared to control at post-intervention and three-month follow-up, and also enhanced focused attention, working capacity and occupational self-compassion (Roeser, Schonert-Reichl, Jha, Cullen, Wallace, Wilensky, Oberle, & Thomson, 2013). Another the US study in 2016, Harris et al. (2016) applied mindfulness techniques consisted gentle yoga and meditation practice to 64 school educators in the US and findings indicated intervention participants improved significantly in their classroom management, decreased in self-reported daily physical symptoms and two physiological indicators (cortisol levels and blood pressures) compared to control (Harris, Jennings, Katz, Abenavoli, & Greenberg, 2016). The study findings on mindfulness approach seems offering good outcomes on reducing psychological disorders and burnout in educators at school levels. However, tertiary educations have had many aspects differences to the school settings regarding complexity of lectures/tutorials and environment around the universities. Unfortunately, as far as we know, there has been no investigation of the effects of a mindfulness intervention for university staff in Australia on job satisfaction and psychological disorders.

This study was a pilot study that examined the beneficial effects of mindfulness meditation on job satisfaction, mindful awareness and anxiety levels in university personnel.

## 2. Methods

The study used mixed methods, with a quasi-experiment and in-depth interviews. Participants were recruited across three campus of a regional university in New South Wales (NSW), Australia. Eligible participants were academic or administrative staff, of any employment status (full-time, part-time, casual), and age group. Information and invitations to participate were distributed at all campus via flyers and university website, and 15 volunteer participants were recruited from two campuses. Participants completed a battery of self-report questionnaires in the week prior to participating in the mindfulness intervention and after finishing the course. Five participants were interviewed two weeks after completing the intervention.

The intent-to-treat population defined that all participants who undertook the mindfulness intervention at least once were handled as not missing the intervention. The post-intervention questionnaires were taken into account for data analysis.

### 2.1. Measures

Three self-administered questionnaires were employed, the Mindfulness Attention and Awareness Scale (MAAS), Daily Assessment of Symptoms – Anxiety (DAS-A) and Job satisfaction. Demographic data were collected, covering age, gender and employment status.

MAAS has 15 items which measure the frequency of open and receptive attention to awareness of ongoing events and experiences. It was designed for use in the general population with people who may be participating in any kind of mindfulness training or with no formal meditation experiences (Brown & Ryan, 2003). It assesses present moment attention, for example 'I find it difficult to stay focused on what's happening'. Measurement is on a six-point scale ranging from 1 'almost never' to 6 'almost always'. Higher total scores indicate greater mindfulness. The internal consistency (Cronbach's alpha) in this sample was .912.

DAS-A is a set of 15 questions covering anxiety, worries, tension, irritability, sleep and cognitive function that correspond to generalised anxiety disorders. Each item is scored on an 11-point scale, ranging from 0 'not at all anxious' to 10 'extremely anxious'. Higher scores reflect greater severity of anxiety symptoms (Morlock et al., 2008). In this study, two items related to the ability to socialise and one about sleeping quality were removed due to poor responsiveness and small effect size for socialized item (Morlock et al., 2008) while an additional item covering sleep disturbance was mentioned, 'how difficult was it for you to fall asleep last night?', giving a total of 13 items. The items were grouped into anxiety, worry, tension, calm and relaxed, concentration, irritability, physical symptoms and sleep. The Cronbach's alpha for this scale was .932.

*Job satisfaction* was a 12-item scale developed by the authors. It covered the job characteristics of salary, workload allocations, promotion, supervision, working conditions and relationship with co-workers and customers. Each item was scored from 1 'very dissatisfied' to 5 'delighted'. The internal consistency of the scale was .74. The responses were summed and high total scores indicated greater job satisfaction.

## **2.2. Intervention**

The mindfulness meditation program was conducted over seven weeks, with one weekly session of 1–1.5 h for four consecutive weeks, then a two-week break before revising all skills in the final week. The programme was modified from Mindfulness-Based Stress Reduction, which is usually conducted for 2 h weekly for eight sessions (Kabat-Zinn, 1990) and includes a yoga skill. However, because of the time constraints on university personnel, the number and length of sessions were reduced and only mindfulness techniques included. The mindfulness exercise for each week included sitting, body scan, and daily life mindfulness. In the sitting session, participants were instructed to sit in a relaxed position with eyes closed and simply direct attention to their breath. If the mind or thought shifted away from the breathing, participants were told to notice and acknowledge the thought passively and simply let it go, through slowly bringing the attention back to the sensation of the breath. With the body scan, the instructor informed participants to notice their body sensations from the feet to the head and *vice versa*. Participants received instructions on how to practice mindfulness at home and how to integrate mindfulness into everyday activities.

## **2.3. Data analysis**

Descriptive statistics were used to analyse demographic information, reported as numbers and percentages. Dependent t-test was used to compare scores before and after the intervention for each item of MAAS scale, anxiety attributes (anxiety, worry, tension, calm and relaxed, concentration, irritability, physical symptoms and sleep disturbance) and job

satisfaction. Pearson's correlation was used to measure the correlation between DAS-A scale, MAAS instrument and level of job satisfaction. A  $p$  value of less than .05 was considered statistically significant.

Interviews were recorded and transcribed by a research assistant, and content analysis used to explore mindfulness experiences in relation to awareness and the advantages/disadvantages of the programme. Provisional codes were assigned to organise the meaning of groups. Axial coding enabled the concepts to be compiled based upon their similarities resulting in emergent themes. While performing the coding process, the authors discussed the concepts and themes. Where there were disagreements about themes, the authors discussed the issues until consensus was reached.

### 3. Results

Most participants were female (86.67%), aged 40 years or over (93.33%), and all worked in administrative/professional positions (see Table 1).

When comparing each mindfulness item before and after the intervention, findings clearly showed participants were more aware of being in the present and not acting without thinking. For instance, they performed better on staying focused ( $t(14) = -3.09, p = .00$ ), noticing feelings of physical tension ( $t(14) = -4.00, p = .00$ ), not forgetting person's name as soon as being told ( $t(14) = -2.32, p = .03$ ), being aware of running automatically ( $t(14) = -3.55, p = .00$ ) and not being preoccupied with the future or the past ( $t(14) = -2.69, p = .01$ ). There was a significant difference in total mindfulness score between pre- and post-intervention (see Table 2).

The only anxiety category to show statistically significant difference between pre- and post-intervention was sleep quality. Participants reported significantly improved quality of sleep after completing the mindfulness intervention,  $t(14) = 3.23, p = .00$  (Table 3). The findings of job satisfaction showed no significant difference after intervention compared to a baseline.

Correlations between job satisfaction and anxiety attributes and mindfulness levels are shown in Table 4. Prior to the intervention there were statistically significant negative correlations between job satisfaction and sleep quality, job satisfaction and irritability and job satisfaction and worry. After the mindfulness intervention, there remained significant inverse correlations between job satisfaction and almost all anxiety categories except being calm

**Table 1.** Demographic data.

	No (%)
Gender	
Female	13 (86.67)
Male	2 (13.33)
Age (Years)	
18–29	0
30–39	1 (6.67)
40–49	6 (40)
50–59	6 (40)
60 and over	2 (13.33)
Staff position	
Administrative/Professional	15 (100)

**Table 2.** Mindfulness attention and awareness scores before and after intervention.

MAAS	Mean ± SD	t Value	p Value
Experiencing some emotion and not being conscious of it	-.66 ± 1.49	-1.72	.10
Breaking or spilling thing because of carelessness	-.40 ± 1.50	-1.03	.32
Difficult to stay focused on what's happening in the present	-1.00 ± 1.25	-3.09	.00*
Tending to walk quickly without paying attention to what I experience along the way	-.73 ± 1.43	-1.97	.06
Tending not to notice feelings of physical tension ... until they really grasp my attention	-1.06 ± 1.03	-4.00	.00*
Forgetting a person's name almost as soon as I've been told it for the first time	-.66 ± 1.12	-2.32	.03*
Seeming like I am 'running on automatic' without much awareness of what I'm doing	-1.06 ± 1.16	-3.55	.00*
Rushing through activities without really being attentive to them	-.73 ± 1.38	-2.04	.06
Getting so focused on the goal ... that I lose touch with what I am doing right now to get there	-.06 ± 1.09	-.23	.81
Doing jobs or tasks automatically, without being aware of I am doing	-.13 ± 1.24	-.41	.68
Finding myself listening with one ear, doing something else at the same time	-.46 ± 1.50	-1.20	.25
Driving places on 'automatic pilot' and then wondering why I went there	.93 ± 1.70	-2.11	.05
Finding myself preoccupied with the future or the past	-.86 ± 1.24	-2.69	.01*
Finding myself doing things without paying attention	-.73 ± 1.62	-1.74	.10
Snacking without being aware that I'm eating	-.26 ± 1.79	-.57	.57
Total mindfulness awareness scores	-9.80 ± 12.20	-3.10	.00*

\* $p < .05$ .

and relaxed. There was a significant positive correlation between feeling calm and relaxed and high levels of job satisfaction,  $r(14) = .54$ ,  $p = .03$ . Total scores for anxiety attributes showed statistically significant inverse correlation to job satisfaction both before and after the mindfulness intervention, while the relationship between total mindfulness scores and job satisfaction was not significant (see Table 4).

### 3.1. Qualitative results

The benefits of mindfulness approach included making participants feel inwardly calm and relaxed, allowing them to better control and handle circumstances around them.

Participant B: I think, it took a little while for this to emerge, and it was a subtle difference, but I actually noticed that I felt calmer a lot of the time, especially in situations where there was a heated discussion or conflict. In the past, I would just mentally shut down and not know how to handle it or what to say. But now, I'm able to stay calmer and engage and respond in a better way. I think generally every day, I feel a little bit calmer and more able to just step back from my thoughts and just observe them rather than getting caught up in them so much.

Participant D: ... But here we just did it sitting with your eyes closed. But yeah, I suppose I just felt relaxed. I felt relaxed, I felt a lot less stressed. It was really good when I, after, because it was at the end of the day. If I had a really stressful day, I just felt so much relaxed and instead of driving home like a zombie, I could actually drive and think and be aware of everything. So yeah, I supposed I found that very very beneficial which is why it sort of made me want to continue with it.

Apart from controlling inner thoughts, one participant was surprised to notice that practicing mindfulness had the outcome of reducing blood pressure.

Participant D: Actually, what I did notice because I monitor my blood pressure quite regularly at home and what I noticed was if I did a mindfulness technique ... I could actually reduce my blood pressure level down to normal levels. Now that was quite

**Table 3.** Daily assessment of symptoms-anxiety (DAS-A) scores, and job satisfaction before and after the intervention.

Scales	Mean $\pm$ SD	t Value	p Value
DAS-A scale			
Anxiety	1.80 $\pm$ 9.06	-.24	.81
Worry	1.06 $\pm$ 2.52	1.63	.12
Tension	4.80 $\pm$ 8.80	2.11	.05
Calm and relaxed	-.40 $\pm$ 3.73	-.41	.68
Concentration	.26 $\pm$ 3.03	.34	.73
Irritability	1.46 $\pm$ 5.70	.99	.33
Physical symptoms	.66 $\pm$ 2.91	.88	.39
Sleep disturbance	2.26 $\pm$ 2.71	3.23	.00*
Total scores of DAS-A	11.93 $\pm$ 26.74	1.72	.10
Total scores of job satisfaction	-.33 $\pm$ 5.31	-.24	.81

\* $p < .05$ .**Table 4.** Identified correlation between job satisfactions with DAS-A and MAAS

DAS-A scale	Job satisfaction			
	Before intervention		After intervention	
	r	p Value	r	p Value
Anxiety	-.37	.17	-.54	.03*
Tension	-.42	.11	-.58	.02*
Irritability	-.60	.01*	-.85	.02*
Worry	-.56	.02*	-.56	.02*
Calm and relaxed	.25	.36	.54	.03*
Concentration	-.21	.44	-.09	.74
Physical symptoms	-.26	.33	-.48	.06
Sleep disturbance	-.62	.01*	-.61	.01*
Total DAS-A levels	-.56	.02*	-.68	.00*
Mindfulness levels	.28	.30	.02	.91

\* $p < .05$ .

outstanding because I thought wow, that quite ... that made me think that this is something that I need to do regularly to, you know, obviously benefits my health and improve my health.

The benefits of mindfulness were felt not only by the individuals who participated. There was also an indirect impact, with better relationships with family members compared with before the intervention.

Participant B: When I felt overwhelmed with the level of work, it would impact with my relationships at home because I would come home quite irritable-I guess .... Now, I feel much better about my work day. I feel like I've got the important things done and I can then sort of leave work behind when I go home and be more relaxed with my family.

#### 4. Discussion

The quantitative and qualitative findings clearly show that running a mindfulness exercise in the workplace provided beneficial outcomes of calmness and relaxation and contributed to improve self-awareness and alertness. The Mindfulness Attention and Awareness results show that participants were alert and more able to stay focused in the present moment

without dwelling on the past or the future. This finding about the effectiveness of mindfulness practice is not surprising. By practicing mental training such as mindfulness, participants gain the ability to detect incorrect and unwholesome cognitive evaluations which normally go unnoticed, and which in turn enhance self-regulation by interrupting automatic thought and behavioural patterns. While individuals still face stressful circumstances arising from the workplace, they are able to notice and observe the negative emotions and accept them, rather than acting in a belligerent or offensive manner (Fetterman, Robinson, Ode, & Gordon, 2010). This was apparent in the qualitative results.

Empirical studies have also demonstrated that the mindfulness approach reduced work-related stress and other negative emotions (Roche, Haar, & Luthans, 2014; Shonin, Van Gordon, Dunn, Singh, & Griffiths, 2014). The findings of the present study seemed to contradict previous findings in that the intervention did not reduce emotional distress, but it was more likely to help sleep disturbance. One explanation is that it takes time and regular practice to gain the full benefits of the mindfulness approach. Its effectiveness is reduced when individuals who do not practice it regularly are faced with an overwhelming workload that must be handled properly and effectively to deliver customer satisfaction. In educational settings, employees are expected to respond to demands from students and academic staff appropriately and this is contributing to emotional exhaustion that may accumulate from time to time. Therefore, the intervention may not be adequate to handle high levels of emotional exhaustion if mindfulness is only practiced once a week. Nevertheless, the benefits of mindfulness approach were demonstrated in reduced sleep disturbance. This is consistent with several studies indicating the efficacy of mindfulness-based intervention in improving total sleep time and reducing cognitions related to rumination and worry (Heidenreich, Tuin, Pflug, Michal, & Michalak, 2006; Ong, Shapiro, & Manber, 2008).

With job satisfaction, the post-intervention findings clearly showed that emotional distress (anxiety, tension, irritability, worry) had a negative impact on job satisfaction, while a calm and relaxed attitude indicated a positive outcome for job satisfaction. Surprisingly, almost all emotional distress items showed stronger inverse correlations with job satisfaction after the intervention than before. This could be explained through external factors, particularly an organisational restructure of an entire university that was considered a threat or perceived threat to job status and which resulted in higher job stress. The restructure and/or transformation of units in an organisation are often perceived a potential risk to employee status because of the possibility of job losses. While the mindfulness approach contributed to calm and relaxed feelings during the intervention it could not counter participants' concerns over job security and possible future loss of employment.

## 5. Limitation of the study

The study used a quasi-experimental design with no randomisation and no control group and therefore may be unable to establish a causal association between the intervention and outcomes. The small sample size might have resulted in low statistical power regarding an effect size and is less likely to generalise to the whole administrative university personals and other population (i.e. youth, men) in high educational settings. Arguably, a review article described mindfulness program contributed enormous benefits to improving children and adolescent learning and performance in the schools through reducing stress and enhancing class engagement and participations (Burke, 2010). It seemed the mindfulness meditation

approach has potential benefits for younger people regardless ages and genders (Raes, Griffith, Van der Gucht, & Williams, 2014). This study had not attempted to identify durability of mindfulness techniques according to small sample size. However, a school-based study in the US demonstrated the long-term effects of this approach for reducing psychological disorders lasting for a six-month (Raes, Griffith, Van der Gucht, & Williams, 2014) follow-up. Future studies are needed to recruit large samples with diverse genders and age groups to determine mindfulness efficacy towards other participants' characteristics and should also follow-up participants in order to identify durability of the method.

The strength of the study is utilised the mixed methods provide good understanding of and insight into the benefits of a mindfulness intervention through valid and reliable results.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

The project has been funded by a compact funding No. 90 from School of Management and Marketing, Faculty of Business, Charles Sturt University.

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